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NEUROLOGIC ASPECTS OF LOW-BACK PAIN *

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Any exhaustive discussion of the etiologic factors that may be responsible for pain in the back is impossible in a presentation of this kind, but there are a group of deviations from the normal which must come forward prominently for discussion when low-back pain is the subject under consideration. Many etiologic factors, extraneural in origin, deserve a prominent place in such a discussion, but in this connection attention is chiefly directed to those conditions in which pain is the result of an involvement of the nervous system.

The neurologist, for one or many reasons, is constantly called on to determine the cause of pain. This situation has arisen as a result of the concurrent action of a considerable number of factors, the most weighty of which is perhaps the prevalence of pain as a symptom of a functional disturbance. This differentiation, even to the neurologist and psychiatrist, constantly in contact as he is with the baffling appearances which functional neurologic disease may present, is often extremely difficult, and at times is impossible of solution until after protracted study.

Pain is and has ever been a striking and spectacular symptom. There is but little difficulty in recognizing the reasons that have led to its adoption with such promiscuousness as a symptom of functional neurologic disease. In the first place, no one can with certainty prove that the pain complained of does not exist, and in the second place the presence of pain presupposes some serious underlying cause and therefore places the poor sufferer in the category of those afflicted by nature or providence and therefore deserving of special consideration on the part of relatives, friends and the community in general. This "asset value" of the functional symptoms must never be lost sight of, as it is perhaps the most cogent of all factors influencing the development of functional symptomatology.

One may say that the object of all functional disorders is to get something for the patient which he desires and is unable to obtain by other means. It is a defense mechanism brought into play against a hostile environment. The disease is always an asset. A study of the patient's make-up and of his physical and human environment will demonstrate that somewhere in his surroundings are factors against which he has battled and has retired defeated and, like a good tactician, has withdrawn his lines, redisposed his forces, and laid out a new plan of campaign. Often the situation resolves itself into the simple equation of desire plus inadequate resources plus normal health equals failure, whereas desire plus inadequate resources plus abnormal health equals success.

Society in general is a cold, calculating, heartless set of forces in which the healthy battle without favor for the rewards of success which the victors carry off, directly proportionate in extent with their power. Against this, the unfit, the unsuccessful, the handicapped, fight a losing struggle, and, confronted with the prospect of failure and the nonattainment of their desires, cast about in search of some pretext or excuse which may obtain for them the results which their own efforts have failed to reap. The readiest means of escape from this position is the acquisition of some illness not sufficient to handicap them in the enjoyment of their desires, yet of sufficient weight to obtain concessions and advantages which the healthy will not concede to the healthy. This at once, by appealing to the sense of superiority in the healthy, will allow the unhappy individual to escape from many responsibilities and bask in the radiance of special tolerance and favor.

The sufferer's conception of the pain he endures will be in direct proportion to his grade of intelligence. This may be formless and insusceptible of any further elaboration, or the sufferer may seek to embroider it with all kinds of adjectives, such as pricking, stinging, burning, tearing qualities. Others, more crafty, will indicate a definite site and a crystallized character to the pain, while others, seeking the dramatic or the abstruse, will fall into absurdities of the crudest type. All these complaints defy analysis, for they have no relationship to any known disease and no correspondence to any definite anatomic structure. Those on a higher level of psychic equipment will complicate the picture by adding fugitive, fleeting characteristics to the pain, thus thinking to add interest to their presentation and whet the jaded appetite of the physician by chasing their pain from one point to another, varying its character and duration, and defying all the therapeutic measures of scientific medicine. These merely undo themselves, for they render impossible the explanation of their symptoms on any organic basis.

Another large class of patients presenting functional ailments are the constitutionally inferior, the true hysterics, who, failing to obtain attention and notice by their ordinary equipment, seek to accomplish the satisfaction of their egocentric personalities by the exhibition of patient suffering of intense agony or by the questionable fame of undergoing serious and even mutilating operations for the reward of the interest and adulation of their friends.

The only safeguard against these types is a careful history and physical examination, the exposure of dis-

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crepancies and inconsistencies, and the painstaking exclusion of every possibility that might exist as a foundation for the patient's complaint. In every case, the subjective complaints always far exceed the physical abnormalities, and often in their intense desire to convince and persuade, these patients can be led into the most ridiculous anamnesic excesses and physical absurdities. It is unnecessary to say that they are not malingerers, for they have convinced their psyche that they are sick and the unconscious part of their mental apparatus has now assumed command and dominates the picture. The malingerer knows he is not sick and deliberately manufactures his complaints.

The physical concomitants of pain are never present in these classes of patients: the dilatation of the pupil with paroxysmal pain, the sweating, the increased pulse rate and the unmistakable appearance of pain or agony. These individuals describe the most excruciating pains and the most disabling infirmities with a nonchalance and a sort of detachment which at once gives the lie to their excessive symptomatology. Every ally in laboratory diagnosis must be marshaled against the professional patient, and only on indubitable evidence should operations be performed.

CRITERIA OF PAIN

The four criteria by which pain should be assayed are as follows:

1. What is its anatomic distribution? Pain must have a correct distribution; it must conform to some tissue disturbance, the anatomic confines of some organ or the distribution of peripheral nerves or dorsal root areas, or it must possess thalamic characteristics.

2. Is it accompanied by physiologic disturbances resulting from tissue or organ inflammation? If the pain is interpreted as an organ or tissue inflammation, is there evidence of constitutional reaction in the blood count or temperative movement or demonstrable evidence of inflammation, either acute or chronic?

3. Does the organ or tissue apparently involved show the results that should follow such interference with its functions? When the pain is interpreted as due to the involvement of some definite organ or tissue, does the structure in question show the functional or material deviations from the normal which might be expected and which can be elicited by various general or special procedures? As exemplifying this criterion, the instance of the close similarity between the pain of a gastric ulcer and the gastric crises of tabes dorsalis may be cited, but in the latter no roentgen-ray evidence of ulceration and no characteristic changes in the stomach contents can be obtained, while the blood and spinal fluid examinations should make clear the character of the process.

4. Is it associated with phenomena which have nothing to do with the functional activity of the tissue or organ apparently involved and which must be explained on some other basis? Are there evidences of disturbed function in other systems of the body which cannot be interpreted as direct results of the organ or tissue seemingly implicated by the morbid process? This association is the one most commonly overlooked or incorrectly interpreted. In a case with pain in the right upper quadrant, is there an increase in the knee jerks, an ankle clonus or a Babinski reflex? Is there a hypesthesia of mild degree affecting one type of sensibility or another? Is there an interference with the control of the urinary or rectal sphincters?

ETIOLOGY OF LOW-BACK PAIN

Skeletal System.—Leaving aside the functional disturbances productive of pain, attention may be directed to the important pathologic conditions characterized by low-back pain. In any diagnosis involving this type of pain, a point of departure may well be chosen in the skeletal system, a group of structures responsible for a great number of pains localized in the lower half of the back. The structures making up the skeleton in this vicinity consist of the os innominatum, the vertebral column and its articulations, and the ligamentous structures in association with these bones. The pathologic conditions that may be responsible for pain arising from these structures may be grouped in the following general categories:

1. Developmental defects.
2. Traumas.
3. Acute and chronic inflammatory processes.
4. Neoplasms.

1. Among the developmental defects that may cause pain in the lower part of the back should be mentioned hemivertebra, asymmetrical sacralization of the fifth lumbar or the first sacral vertebra, spondylolisthesis, decreased lumbosacral angle, calcification of the ileolumbar ligaments and imperfect articulation of the articular processes of the fifth lumbar and first sacral vertebrae. These conditions are demonstrable, in the great majority of cases, by the careful and accurate reading of roentgen-ray plates, and consequently they are usually detected early and do not present any very great difficulty in the differential diagnosis. The underlying cause for the pain is the anatomic arrangement of the articulated skeleton, but the actual cause is the production of faulty, irregular or undue muscular strain. The processes that throw the vertebral column out of plumb laterally, such as hemivertebra or incomplete or faulty sacralization, cause an unequal strain on the bilateral axial muscles; while the conditions that are characterized by a deficient lumbosacral angle, by spondylolisthesis or improper articulation of the lumbosacral joints, produce their pain by the inordinate demands on the supporting musculature. The actual condition responsible for the pain is the abnormal muscular situation; and while it can be improved by thermotherapy and massage, it cannot be cured so long as the underlying skeletal condition remains operative.

2. Traumas, especially fracture of the laminae, transverse processes, pedicles or spinous process, may cause long continued obscure and intractable pain in the back. The chief difficulty in the correct estimation of the cause of this incapacitating condition is the difficulty in obtaining roentgen-ray plates of sufficient clarity to demonstrate the underlying solution in bony continuity. Operative intervention is often necessary with only the history of long continued pain in the back following a definite trauma of sufficient intensity to have caused a fracture which may not be seen in the roentgenograms. In many cases, these injuries may be produced by indirect muscular violence.

Chronic trauma may cause pain in the back by the impingement of one spinous or transverse process on another as a result of an extreme lordosis or scoliosis.

3. Inflammatory conditions affecting the articulations and vertebrae are a prolific cause of pain in the back, the pain being due to the actual inflammatory process or to the muscle spasm reflexly produced in order to protect the part from movement. The most usual examples of this type of low-back pain are those produced by a

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chronic or subacute arthritis involving the surfaces of the bodies and articular processes leading to exostosis and eventual ankylosis and tuberculous spondylitis with its destructive processes attended by extreme muscular spasm, protective in nature. The acute inflammatory processes, such as osteomyelitis, are usually attended by other symptoms which serve to exclude them from these essentially chronic conditions.

4. The pain produced by neoplasms involving the vertebral column is extremely severe, and in many instances the diagnosis can be made by the character, persistence and severity of the pain. Roentgen-ray evidence of a destructive process or the discovery of a neoplastic focus elsewhere in the body serves to indicate the true nature of the cause of the pain in the back.

Musculature.—Probably one of the most prolific causes for low-back pain is an obscure condition apparently limited to the muscles and for the lack of a better name called myositis or fibromyositis. This is a condition, already referred to in connection with the effects of skeletal deviations on the muscles, which deserves a great deal more attention than has been devoted to it. It has long been designated by the term "muscular rheumatism" but in more recent years has masqueraded under the title of neuritis. The general public has extensively adopted this diagnosis, patients constantly appearing with the complaint that they are suffering from a neuritis, and even among neurologists and psychiatrists this diagnosis is made much more frequently than a careful estimation of the symptoms would warrant.

The most common of this group is "sciatica," a mere symptom-sciatic pain caused by a multitude of conditions, the great majority of which have absolutely nothing to do with the sciatic nerve.

Generations of medical students have been taught that any patient who comes into a clinic or office stating that he has a pain in the buttock which radiates into the dorsal aspect of the thigh and downward into the leg has sciatica.

The diagnosis of neuritis, to deserve acceptation by careful neurologists, should be based on the following deviations from the normal:

1. Loss of muscle strength.
2. Loss of muscle bulk and contour—atrophy.
3. Reduction or loss of reflex activity.
4. Alterations or reductions in sensory perceptions.

There may be in addition:

1. Alterations in the electrical reactions.
2. Trophic changes in the skin supplied by the affected nerve.
3. Pain in the area supplied by the affected nerve.
4. Tenderness in the nerve trunks on direct palpation or stretching.

This syndrome has become one of the rare events in neurologic diagnosis, and, except for workers exposed to lead, and alcoholic addicts, it is almost unknown. The diagnosis of sciatic or brachial neuralgia is also becoming much less common, for it merely represents an attempt to explain away pain of a certain distribution by giving it a name but depriving it of all pathologic basis.

The usual etiology for this vast collection of human miseries—the cricks in the neck, the wry necks, the lumbagos, the sciaticas, the brachial neuritides—is in almost all cases an acute, subacute or chronic myositis, probably the most prolific cause for pain in the lower part of the back. It can attack voluntary, striated muscle wherever this type of muscle may exist. Its most favorite location is in the lumbar or gluteal muscles, where it produces the typical lumbago and the so-called sciatica. It is characterized by pain, which is usually dull and aching in character and which may remain localized or may show some tendency to radiation. It may at times be lancinating in character or even burning and very disagreeable. It is usually made worse by cold, damp or rainy weather and is less noticeable in hot, dry seasons and climates. It typically is worse after the affected muscles have remained in any one position for a considerable length of time, as in the back and hips in the morning on awakening, or in the neck and shoulders of those using the hands and arms in more or less fixed attitudes, such as writers, violinists and pianists. It may affect isolated muscles, as the masseter, producing pain in the side of the face which may be mistaken for neuralgia. A frequent site for this disturbance is the teres major muscle, which evidences its presence by great pain on internal rotation of the arm in an attempt to reach the rear hip pocket.

On examination, certain simple physical symptoms can be detected. In the first place, no evidence of involvement of the central or peripheral nervous systems can be elicited. Definite, localized, more or less acute tenderness to direct or deep palpation over the muscle mass itself is always present, and in favorable instances it is possible to find areas of apparent infiltration in the muscle tissue which may be so numerous as to give the impression of rubbing the thumb over a corrugated washing board. The effect on the muscle itself of the presence of this inflammatory focus is to produce a localized or generalized spasm which in the lumbar region may actually produce a tortipelvis and an apparent shortening of one limb, while in the cervical region a typical wryneck usually results.

This condition, probably more widely disseminated throughout the community than any other single pathologic condition, has received scant notice and but little attention. Practically every one has experienced the lameness of green, unexercised muscles or the pains and stiffness that follow a thorough, prolonged wetting. Whether these conditions are actually inflammatory in character may be somewhat doubtful; yet the existence of such a condition as a clinical entity is so definite and its treatment usually so satisfactory that a more general appreciation of its characteristics will be a benefaction to many sufferers from its often severe and incapacitating effects. In the great majority of cases it yields fairly promptly to vigorous, prolonged and frequently repeated muscle-kneading massage, which can well be preceded by deep heat exposure, by baking or by diathermy. The myositic condition is usually considerably aggravated by the deep massage for the first treatments, but, with persistence and conscientious following out of a strict regimen of massage and baking, relief and then complete cessation of pain will, in the great majority of cases, be obtained. The question of focal infection in the production of this condition has received considerable attention and foci of infection should, on general principles, be removed. This procedure also in a number of cases has been followed by complete and permanent cessation of the pain. The most usual foci are the teeth, tonsils, accessory nasal sinuses, prostate and gastro-intestinal tract.

In a recent case exhibiting localized pain and tenderness in the left gluteus maximus, in which careful neurologic and serologic examination did not disclose any involvement of the central or peripheral nervous

systems, a biopsy provided material which showed a definite muscular degeneration with increase in the sarcolemma and fixed connective tissue cells, shrinking of the muscle fiber with fatty degeneration and a complete loss of the normal cross-striations. A slow improvement has been obtained with the methods referred to.

Nervous System.—In considering the causes for low-back pain which may arise entirely within the nervous system, there is a large group of essentially generalized conditions which may have definite localization, thus bringing them into this general classification. Some of these conditions, which cannot be considered here except by name, are the meningitides both of the pia mater and of the dura mater; the spinal form of epidemic encephalitis; myelitis; meningomyelitis; herpes zoster, and syringomyelia. They usually present such an outstanding neurologic complexion that their essential character is recognized early.

The group to which especial attention is drawn includes adhesive arachnoiditis, the neoplasms of the central nervous system, and radiculitis of the cauda equina.

Adhesive Arachnoiditis: During the past few years, our attention at the Neurological Institute has been attracted to this condition by a group of cases that have proved of great interest. These cases have been relatively few but have presented certain characteristics which are sufficiently clear to enable us at least to consider this condition in any differential diagnosis concerning spinal cord disease attended by pain.

The term is essentially a poor one on account of the fact that the arachnoid is a membrane devoid of blood vessels and therefore incapable of undergoing a primary inflammatory process. Yet, respectability is given to this name by the fact that blood vessels may grow into the arachnoid from either the pia or the dura mater, and thus produce, secondarily, a true picture of subacute or chronic inflammatory change.

The essential characteristic of this condition is that it produces adhesions between the arachnoid and the surface of the pia mater and thus to the spinal cord itself by means of which the free subarachnoid space is either locally or generally constricted in such a way as to interfere with the normal circulation of the cerebrospinal fluid within the subarchnoid space. In diagnosis it has been particularly difficult to differentiate between these cases and typical spinal cord neoplasms. They present a rather feeble replica of the symptomatic picture usually afforded by spinal cord neoplasms. In general, they are rather insidious in onset and slow in progress, and at no time show the clear-cut evidences of the pathologic change usually found associated with neoplasms of the spinal cord. As a result of the sacculation of the cerebrospinal fluid through the adhesions between the arachnoid and the pia mater and the constricting action at the point of adherence, compression of the spinal cord takes place, resulting in an interference with the impulses traversing the long descending and ascending tracts within the spinal cord.

As a rule, the condition is characterized by more or less pain of a dull, aching character referred to the distribution of the roots that are affected by the pathologic process in the shoulders, back or lower limbs. The pain is never so severe as that seen in spinal cord neoplasms.

If it were not for the facts brought out by the manometric determination of the subarachnoid spinal fluid pressure, many of these cases would be diagnosed as diffuse, inflammatory or degenerative processes involving the spinal cord. The manometric determination of the spinal fluid pressure, however, supplies an additional factor which has facilitated the diagnosis of this condition. These cases show, when examined by means of the manometer, a block in the transmission of the cerebrospinal fluid pressure, the Queckenstedt phenomenon—the failure of transmission of pressure from the cranial to the vertebral subarchnoid space after compression of the neck. These cases usually present the picture that is called a complete block.

Careful search of the history of these patients is sometimes of value in that it may indicate subacute or chronic inflammatory processes that have affected the spinal cord some time fairly remote from the onset of the symptoms. In some cases a definite history of a cerebrospinal meningitis may be obtained; in others, the evidences of some acute infectious process involving the spinal axis in the course of an acute infectious disease may appear, while in certain instances a definite history of a trauma to the back with considerable disability for a variable length of time following the injury can be obtained.

In the differential diagnosis, the clinical picture is usually not that of a typical spinal cord tumor, whereas the data may be obtained by lumbar puncture, and the manometric determinations are quite typical of a spinal cord tumor occluding the subarachnoid space.

At operation it is often possible, when the adherent areas lie immediately beneath the field exposed, to show a sacculation of the arachnoid, completely surrounding the spinal cord, containing within it a relatively large accumulation of cerebrospinal fluid, which by means of its pressure on the spinal cord produces a large proportion of the symptoms making up the syndrome.

The freeing of these adhesions results in a resumption of the normal cerebrospinal fluid circulation, very satisfactory results often following the breaking up of these adhesions and the removal of the pressure of the sacculated cerebrospinal fluid accumulations on the spinal cord.

Spinal Cord Neoplasms: Neoplasms present a varying relationship to the spinal cord; according to their location they may be extramedullary, in which case they are extradural or intradural, or they may be intramedullary. In a series of 100 collected cases (Elsberg), 86 per cent were extramedullary, of which 66 per cent were intradural and 20 per cent extradural, while 14 per cent were intramedullary. It is possible that some of this last group may have been in reality truly extramedullary and only secondarily became embedded in the cord and thus gave the appearance of being intramedullary.

The diagnosis of spinal cord neoplasms is, as is the case in practically all types of diagnosis, a very variable proposition, at times being so patent that no one could mistake the situation, and at others impossible to make short of the operating table. At the Neurological Institute, we have been accustomed to group cases in which tumor is suspected in three classes: class A, in which the symptoms and signs are classic and in which, in practically 100 per cent of such cases, a spinal cord neoplasm is found at operation; class B, in which the diagnosis is questionable, and class C, in which there is little probability of finding a neoplasm.

It may be of value to mention the chief subjective and objective observations in connection with spinal cord neoplasms. The onset is usually gradual and insidious, although it may be acute with the appearance of a sudden paraplegia. The first symptoms are usually

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dependent on interference with the roots and the ascending afferent tracts and therefore sensory in character.

Pain is preeminently the symptom most constant in appearance with intradural, extramedullary neoplastic disease; that is, neoplasms arising in the space between the spinal cord and the inner surface of the dura mater. It may be present in intramedullary neoplasms but is much less common.

The pain occasioned by a spinal cord tumor owes its origin to the involvement of the dorsal nerve roots by the pathologic process. In this instance the activating agent is the pressure of the neoplasms on the dorsal roots, either within or without the dura. The pain is usually dull and aching in character, but subject to acute exacerbations of lancinating, shooting, darting pain, which may be limited to the immediate vicinity or referred more or less distantly according to the exact anatomic location of the peripheral distribution of the nerve root involved. These conditions are for months considered to be rheumatic or neuritic, and only when other symptoms appear or a lumbar puncture is performed is the true character of this situation discovered. The pain is often much increased by coughing, sneezing or straining.

In other cases, perversions of sensation may be found indicating spinal cord pressure and arising as a result of irritation of the long ascending afferent tracts by direct pressure or the retention of cerebrospinal fluid above the tumor. In this case the sensations are those of tingling, burning, pins and needles, ants crawling under the skin, or numbness and heaviness in the lower limbs. These disturbances are more usual with ventrally placed neoplasms which, on account of their location, early affect the ventrally located spinothalamic tracts. These tumors, because they are located at a distance from the dorsal roots, are often unaccompanied by pain. Girdle sensations may result from root irritation. Occasionally a feeling of stiffness may be the presenting abnormal sensation arising as a secondary manifestation owing to the increased muscular tone resulting from the involvement of the pyramidal tracts.

Neoplasms may at times be entirely painless, but this is the exception and not the rule. Root pain is most frequent in intradural extramedullary growths, occurring in about 66 per cent; in about 33 per cent of extradural growths, and in about 15 per cent of intramedullary neoplasms (Elsberg). The radiation of root pain is in accordance with the segmental sensory supply of the affected dorsal root. In neoplasms of the cauda equina, the pain is usually perineal in location, and persistent pain in this region or in the rectum without adequate explanation should always arouse the suspicion of a tumor of the cauda equina.

The pain of spinal cord neoplasms is not always constant but may be intermittent; remissions lasting as long as ten years have been reported. The pain also may vary considerably in severity, probably as a result of varying local conditions in the relationship of the neoplasm and the nerve root. Position also frequently has a marked influence on the pain, and this may lead to the production of fixed postures in which the pain is relieved, such as of the head and neck in cervical tumors, or, in the case of a tumor of the cauda equina, kneeling with the body bent forward, in which position only could relief be obtained.

While pain in a given location is usually indicative of an involvement of the particular root supplying that area with sensation, pain is felt at times in other parts of the body. For example, the pain from a neoplasm of the upper thoracic region may first be felt in the lower extremities, but usually, in such cases, pain in the appropriate distribution appears later in the course of the disease.

Numbness is a common complaint and usually is progressive. The exact behavior of the increasing numbness often has a considerable influence on the diagnosis. In extramedullary disease, the numbness usually appears distally and progresses proximally and upward, while in intramedullary disease it begins proximally and spreads distally. In the former, the level of the lesion is late in appearance, while in the latter the level is indicated in the early stages of the disease. The numbness usually involves touch sensibility, the upper level of symptoms progressing gradually upward to correspond finally with the anatomic level of the neoplasms.

Motor Manifestations: These manifestations of increasing involvement of the spinal cord may be irritative or paralytic. In the former case, contractions and spasms of an involuntary character appear in one or both limbs, while in the paralytic type there appears a gradually increasing weakness in the lower extremities. The motor symptoms usually appear after the sensory signs, and often a considerable time after the onset of the condition. In other cases they may be the first to develop and appear quite suddenly, occasionally as the very first indication of the disease.

In certain cases the entire course of the disease may take place with only motor symptoms, the neoplasm being found at autopsy or at operation. In other cases the sensory symptoms may appear extremely late or only in a fragmentary form. Under such conditions a localizing diagnosis is made only by the use of other criteria, dissociation of reflexes, disturbances of special functions or by special procedures, such as the injection of iodized oil or air.

The classic evidences of pressure on the pyramidal tracts usually appear early and progress with the increasing weakness. These are hyperflexia, hypertonus, the appearance of abnormal plantar responses, and the loss of the abdominal reflexes.

Tumors of the cauda equina may be difficult of determination on account of the fact that the spinal cord is not pressed on and therefore there is no spinal cord compression. This type of neoplasm produces extremely severe pain in the lower back, which is greatly exaggerated by bending the vertebral column. The neurologic signs that accompany this type of neurologic disease are due to involvement of the roots of the cauda equina, and therefore the motor signs are those of flaccidity and paralysis with marked atrophy, sensory disturbances limited to the dermatomes supplied by the cauda equina, involvement of the sphincters, and the characteristic changes in the cerebrospinal fluid. In the giant tumors of the cauda equina a characteristic deformity of the vertebral column may appear, which shows in the roentgenogram as an excavation of the dorsal surface of the vertebral bodies. These tumors are often extensive, producing tremendous excavation of the vertebral bodies and filling the entire intravertebral space with a gelatinous, jelly-like material. These tumors do not metastasize.

The diagnosis of the level of the lesion is most important from the therapeutic surgical aspect and depends on:

1. The development of a sensory level—the point at which reduced or altered sensibility merges into normal sensibility. This transition may be abrupt or gradual and may affect

all types of superficial sensibility, such as touch, pain and temperature, or any one of them.

2. Motor disturbances, which include interference and disparity in the tendon reflexes, weakness, mass reflexes, stiffness below the level, paralysis of muscle groups from direct pressure, and loss of the upper or lower abdominal reflexes or both groups. The muscles directly involved may show fibrillary contractions.

3. Trophic disturbances. Muscles supplied by ventral horn cells that may be directly involved by the pressure of the neoplasm on the spinal cord or on a nerve root will show an atrophy, loss of contour and changes in the electrical reactions.

4. Sympathetic disturbances, such as perverted pilomotor responses, abnormal sweating and vasomotor changes.

5. Interference with special functions.

Disturbances in the function of the bladder and rectum usually appear late in the course of the disease. Retention is the usual condition, with dysuria from the distention and finally a dribbling incontinence from an overfilled bladder. Constipation is usually the rule in compression of the spinal cord. Complete loss of sphincteric control usually does not take place until a complete transverse lesion is produced in the spinal cord by the compression of the neoplasm. When a disturbance in the function of the bladder and rectum occurs early in the course of neoplastic disease of the spinal cord, the suspicion may be entertained at once that the location of the tumor will be intramedullary.

Tenderness of the spinous processes has been emphasized as a valuable diagnostic point in the diagnosis of spinal cord neoplasms, but more exact analysis has shown it to be faulty in many respects and not to be confidently depended on either as an indication of the level of the lesion or even as a differential point in the character of the lesion, although very acute, localized tenderness is suggestive of malignant disease of the vertebral column.

Involvement of the vertebrae by either primary or secondary malignant disease may present a symptomatic picture that is difficult of differentiation from a spinal cord neoplasm. The most valuable aid in such a diagnosis is the discovery of malignant disease elsewhere in the body. The roentgen ray in the later stages often presents valuable evidence of a progressive destruction of the vertebrae, but often, by that time, the diagnosis has become self-evident. The onset of symptoms due to primary growths in the vicinity of the vertebral column can be distinguished only with great difficulty as they may be slow and insidious in onset; but in general the pain is much more severe and excruciating, the patient complaining of grinding, boring, bone-breaking pain, and the course is usually more rapid, leading within a short period to evident indications of the true character of the process. Metastatic neoplasms are usually more fulminating and rapid, the entire duration of the illness being relatively short.

In women, the chief sources for metastatic vertebral disease are the breasts and the thyroid, while in men the prostate is a frequent origin. Hypernephromas also frequently metastasize into the bones of the axial column.

Carcinoma is, of course, always secondary in the vertebral column, while sarcoma may be primary or secondary.

EVIDENCE OBTAINED BY LUMBAR PUNCTURE

An examination of the pressure and properties of the cerebrospinal fluid or its membranes is an essential item of diagnostic importance in the study of any type of disease of the spinal cord. When the question of the possibility of a spinal cord neoplasm is at issue, an estimation of the pressure and the effect of various maneuvers on this pressure must be obtained. To obtain this evidence, manometric readings should be procured, and the simplest and most dependable method is that afforded by the use of the graduated glass tubes made for the particular purpose. They can be connected with the lumbar puncture needle by means of a rubber tube and an adapter.

The normal pressure varies between 100 and 200 mm. of water. The pressure, if altered at all in cases of spinal cord tumor, is usually reduced.

The procedure which has added materially to the information made available by lumbar puncture is that devised by Queckenstedt, which indicates the presence or absence of an interference with the fluid circulation within the subarachnoid space. The normal level is first carefully determined and the respiratory and circulatory oscillations observed; then the patient is told to bear down as if endeavoring to empty the bowel; this produces a venous stasis within the thorax, a failure of the blood in the thoracic vertebral space to empty into the thoracic veins, and a consequent rise in the intrathecal pressure with a corresponding rise in the pressure of the cerebrospinal fluid to a point at least double the initial pressure. After the level has returned to normal, the deep veins of the neck are strongly compressed by the fingers, which are applied against the side of the neck directly below the angles of the jaw. This produces a marked stasis of blood within the cranial cavity, the extrusion of cerebrospinal fluid from within the cranium and, if the subarachnoid space is free, a rapid rise in the level in the manometer until the fluid can be forced out of the top of the manometer. On release of the compression, the fall of the level of the fluid is rapid and complete. If the circulation of the spinal fluid is completely impeded by one cause or another, this rise when the neck is compressed will fail to take place. If the obstruction is partial, fluid may be forced past the obstructing mass with a delayed or imperfect rise and a slow fall, without a return to the normal level. If the spinal fluid is now removed, the pressure may fall to zero and no fluid will subsequently appear in the manometer.

Ayer of Boston has added another diagnostic step in his double puncture, one needle being inserted in the lumbar sac and the other in the cerebellomedullary cistern, the pressure in the two loci being studied under the same series of procedures, with the comparison of any divergent results with the clinical signs and symptoms.

Removal of the spinal fluid may aggravate signs already present or elicit phenomena which up to that time were absent, as a result of a removal of the fluid support beneath the tumor, allowing the tumor to exert greater traction on a nerve root or greater pressure on the spinal cord.

The changes in the physical and chemical properties of the spinal fluid may be of great value in the differential diagnosis. A change in color is of great importance, the color ranging from a light canary yellow to a deep yellowish brown. Although this discoloration may be found in other types of disease, its demonstration is a definite cause for suspecting the presence of a spinal cord tumor, usually intradural and extramedullary but occasionally intramedullary or extradural. It is quite frequent and usually extreme in neoplasms of the cauda equina. This condition is called xanthochromia.

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An increase in the nitrogenous elements of the spinal fluid is a usual concomitant of neoplasms of the spinal cord, most marked with extramedullary neoplasms and greatest in cases in which there is marked compression. The normal value is from 15 to 45 mg. per cubic centimeter of fluid, while in spinal compression it may reach 2,566 mg. Spontaneous coagulation may appear in neoplasms of the cauda equina and is always accompanied by a yellowish discoloration, although this need not be intense. The cells in the spinal fluid are usually not increased. If increased, this usually indicates an intramedullary disease. If by any chance the tumor itself is directly entered by the needle, large numbers of tumor cells may be obtained.

The syndrome first observed and described by Froin is characteristic of the giant cell tumors of the cauda equina. This syndrome is characterized by xanthochromia, spontaneous coagulation and a normal cell count.

RADICULITIS OF THE CAUDA EQUINA

The clinical and pathologic condition known as radiculitis of the cauda equina was first described by Kennedy, Elsberg and Lambert[1] in 1924. The name which they gave to the condition at that time was "neuritis of the cauda equina." During the years that have intervened between the first description of this phenomenon and the present a number of communications have appeared bearing on this subject, and a number of cases illustrating the same clinical and pathologic picture have been observed at the Neurological Institute and have been verified at operation. A more meticulous consideration of this condition indicates that it should be called "radiculitis of the cauda equina" on account of the fact that the structures involved are to be more accurately considered as nerve roots and not nerves, since the inflammation affects the anatomic parts proximal to the dorsal root ganglions before the nerve fibers have acquired the sheaths of Schwann and hence are not typical nerves but nerve roots.

The condition appears about evenly in males and females and usually during the third and fourth decades. Occupation does not seem to exert any definite influence on the incidence of the disease, and infection and injury do not play any definite rôle in the period preceding the onset of the disturbance. The length of time elapsing between the origin of symptoms and the correct identification of the cause of the symptoms varied between six weeks and twelve years, during which time a myriad of diagnoses have been made and unfortunately a considerable number of useless operations performed.

The onset is usually gradual and in almost 100 per cent of cases is characterized by pain in the back or lower extremities or about the perineum. The pain is usually fairly severe and accentuated by sneezing, coughing, lifting, straining or bending over. At times it is described as sharp and stabbing in character; at others, as a dull, severe, aching pain. It is usually not constant but remittent and may present a distinct radiation over the back of the thigh into the leg, ankle or foot. If the pain appears in the leg, it may show a definite tendency to migrate upward as successive roots are involved in the ascent of the pathologic process. Instead of pain, paresthesia may appear consisting of pins and needles sensations in the legs, tingling, burning, numbness or definite hyperesthesia in the distal portion of the lower extremities or sensations of coldness. Accompanying the pain there may be subjective and objective sensory disturbances, chiefly numbness.

Within a very short time, weakness appears, usually in the feet or legs, occasionally involving the entire leg or both legs. With the weakness, loss of muscle substance develops and a definite drop-foot either unilateral or bilateral may appear. Occasionally, fibrillary twitchings are present. The atrophied muscles present the reaction of degeneration. There is thus a typical picture of lower motor neuron disturbance which serves to differentiate the weakness from that due to funicular disease of the spinal cord.

In cases in which the disease is of long duration, the motor difficulty may be so great that the patient is confined to bed.

The reflexes of the upper extremity are normal, while those of the involved extremities are uniformly diminished in activity, either in one or in both legs, while the achilles jerk of the affected limb or limbs is almost regularly lost. The abdominal reflexes are usually normal and the plantar response is usually that of plantar flexion.

The sensory disturbances at the time of examination show in the majority of cases a radicular or segmental distribution of the perverted sensory modalities almost uniformly affecting the sacral dermatomes, particularly those of the saddle area over the sacrum, the perineum, the genitalia and the outer sides of the legs. If the condition extends upward, the lumbar dermatomes also are involved. Usually the superficial types of sensibility are chiefly involved, but in extensive cases the deep sensibilities also are reduced or lost. With the appearance of these definite motor and sensory disturbances, the sphincteric functions also show an interference with the normal conduction of the nerve impulses, resulting in the development of dysuria, urgency and incontinence, constipation as a rule, and occasionally rectal incontinence.

The spine is usually not involved, although occasionally tenderness of the spinous processes has been elicited. In other cases it may be held stiffly or even rigidly.

The laboratory examinations are usually almost negative. The urine and blood examinations are uniformly negative, but the spinal fluid may show an increase of cells up to 35, with a moderate increase in globulin. The colloidal gold reaction may show a slight increase in protein in the first tubes of the series.

The anatomic and pathologic data obtained on the operating table indicate the presence of an inflammatory process; the cerebrospinal fluid is increased in amount, and the dural sac is usually distended, tense and devoid of pulsation. When the dural envelop is opened, the cerebrospinal fluid gushes out and the roots of the cauda equina exposed within the operative field at once appear swollen, crowded together and distinctly discolored, the change in hue varying from a pinkish to a deep bluish red. Across the roots, and matting them more or less together, may be seen fine delicate adhesions. Under the microscope, the affected nerve roots show a slight degree of degeneration of the myelin sheaths, the axis cylinders are swollen, the clean-cut staining reactions are lost, and the disintegration of the entire nerve root is taking place without at the same time any definite cellular reaction. The dura mater at the point at which the dorsal roots penetrate this membrane shows some chronic inflammatory changes with a few lymphoid cells and fibroblasts. The dorsal root ganglions show degenerative changes, as do also the long afferent tracts of the

1. Kennedy, Elsberg and Lambert: Am. J. M. Sc., May, 1924.

spinal cord. This change is particularly marked about the periphery, and this may indicate that the degenerating agent, whatever it is, is acting not only on the roots and ascending fibers but also on the entire circumference of the spinal cord.

The dividing line between radiculitis of the cauda equina and meningomyelitis is a very difficult one to draw, for in essentials the processes are the same, the only difference in the condition being the locus of appearance. The pathologic changes in radiculitis of the cauda equina are very similar to those found in meningomyelitis, and it is probable that the conditions are essentially similar but that the location of the major part of the symptomatology varies in the two conditions.

The importance of the proper recognition of this type of neural disease lies in the fact that at least two of the patients described by Kennedy, Elsberg and Lambert were operated on for conditions which were blamed for the production of the symptoms with, of course, no benefit whatever. Whether a careful or even a casual neurologic examination prior to operation would have disclosed the real cause of their difficulties is difficult to prove, but it is presumptive evidence that the history of weakness in both lower limbs, pain in the leg and numbness of both knees before the operation for an abdominal hysterectomy might have offered a sufficient clue for a proper diagnosis. In the second patient, who was operated on a year after the appearance of pain for appendicitis, and again two years later, three years after the onset of the pain, for the fixation of a floating kidney, although for two years she had had weakness, unsteadiness and lameness in the right leg and for a year had had recourse to a cane to aid her in walking, one cannot but suspect that evidences of spinal cord disease were present before they were discovered.

SUMMARY

This cursory and, of necessity, incomplete consideration of the causes of pain in the back, viewed from the neurologic aspect, shows that there are many conditions that must be considered, and also that a differential diagnosis under many circumstances is an extremely difficult one, presenting many diagnostic pitfalls.

In the first place, it is necessary to differentiate between conditions involving the extraneural systems, particularly in women the pelvic organs, and in both males and females the osseous and ligamentous tissues making up the vertebral axis.

With the elimination of these two diagnostic possibilities, and in the absence of any indication of an acute inflammatory reaction in connection with the vertebrae or the soft tissues such as might arise in connection with purulent processes, there must come under consideration the great field of conditions within the nervous system which may be, at one time or another, characterized by the appearance of pain.

In considering the organic cause for neurologic pain in the back, it is not necessary for one to make an extended neurologic examination in order to avoid certain pitfalls that lie along the diagnostic highway. It is unnecessary for the general practitioner or the specialist in other fields to be able to differentiate between a cervical hypertrophic pachymeningitis and a spinal cord neoplasm. It is, however, necessary for any practitioner to be able to differentiate between such conditions as a gastric ulcer giving pain in the epigastrium or back, and the gastric crisis of a tabes, or the rectal pain of a tumor of the cauda equina from hemorrhoids or malignant rectal disease. Such a gross differentiation is not difficult and should be within the powers of any careful observer.

A complete, minute, meticulous examination is not necessary. The use of a percussion hammer, the elicitation of a Babinski reflex and the use of a pin for only a short space of time will in many cases be a sufficiently exhaustive examination to indicate definite involvement of the nervous system, and therefore render impossible the confusion of spinal cord symptoms manifested by pain in the back from systemic diseases, conditions which, if they are not excluded, may lead to useless, harmful and expensive operative procedure.

870 Madison Avenue.

PRIMARY ABDOMINAL PREGNANCY

REPORT OF CASE IN WHICH FETUS WAS CARRIED TEN MONTHS PAST THE DATE OF CONFINEMENT

E. R. FURGASON, M.D.
INDEPENDENCE, KAN.

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A review of the early literature revealed the belief that the ovum could be implanted on the peritoneum anywhere and give rise to a primary abdominal pregnancy. Hecker's statistics, according to Williams,[1] recorded this type twice as frequently as the tubal variety. Later, after a careful study of the specimens, it was found that most of them were secondary to the ruptured tubal pregnancy.

Gradually, according to Williams, doubt began to be cast on the existence of primary abdominal pregnancy, so that at the present time most writers, while admitting the possibility of this condition, really doubt its actual occurrence. Bland Sutton actually denies its existence in women and says that it is not observed in the lower animals. Then came such writers as Hirst, Knipe and Grone in 1908 and 1909 describing specimens which entirely fulfil the requirements that it becomes necessary to reckon with in this variety of cases. According to Harrar, abdominal pregnancy has occurred ten times at the New York Lying In Hospital in 156,000 confinements, an incidence of one in 15,600. Five were true intraligamentous cases; two, tubal abdominal; one, the rarest type of all, utero-abdominal, and two, interdeterminable, because the sac was opened directly and was not otherwise orientated. Six occurred in primiparas, three in secundiparas, and one in a tertipara. Six women lived and four died, a mortality of 40 per cent. Of the four that died, two were in a positively septic condition on admission, and one was in a condition of hemorrhage shock from efforts at an original delivery before admission to the hospital. The fourth died from hemorrhage accompanying the removal of the placenta of a living fetus. Of the six that lived, all were delivered of macerated fetuses by laparotomy. Of the four that died, two had macerated and two had living fetuses. The two infants that were born alive died within a few hours, one six months premature, the other at full term with atelectosis and asphyxia. A twin tubal pregnancy becoming abdominal is reported. One twin died at the third month; the other lived seven and a half months, and died when the sac ruptured, one month before operation.

1. Williams, J. W.: Obstetrics, ed. 4, New York, D. Appleton & Co., chapter XXX, p. 696. Harrar, J. A.: Am. J. Obst. & Gynec. **13**: 752 (June) 1927; abstr. J. A. M. A. **89**: 911 (Sept. 10) 1927.

Now and then one finds a case which seems to belong to this group, the primary abdominal pregnancy type. Such a case, apparently filling every requirement that one might set up for this type of pregnancy, recently came to my attention.

REPORT OF CASE

History.—P. S., aged 22, seen, Jan. 14, 1926, gave an interesting history, stating that she had missed her first period, May 23, 1924, and expected to be confined, according to her own estimates, in February, 1925. The patient became ill soon after she missed her first period in May, 1924. This illness grew worse as time went on. The first Sunday in November, 1924, while she was at church, she had a sudden attack of pain in the left shoulder, which radiated over her body; she vomited her lunch and had to be taken home in a car. She was put to bed, and remained there for eight weeks. She lost 40 pounds (18 Kg.) during this illness. It was very difficult during this illness to obtain a bowel action.

The vomiting and vague abdominal illness remained up to the time that she expected to be confined, in February, 1925. However, when the time arrived she did not fall into labor as expected for some reason.

March 11, 1925, she began to have severe labor pains, which lasted for twenty-four hours. Her physician did not report any dilatation of the cervix.

April 1, the menstrual flow began. The amount was more than was natural for her monthly period. April 21, her physician packed the cervix to hasten labor. The cervix was packed twice and a balloon was used once, but this did not produce any dilatation of the cervix. Her physician reported that the balloon could not be inserted far enough to get good results because the head was in the way. Six days after the cervix was packed, the left leg began to swell and it remained swollen until Jan. 2, 1926.

Motion was felt in the abdomen, and the family physician heard fetal heart sounds for the last time in the latter part of April, 1925.

In August, 1925, the patient became somewhat confused owing to the difference of opinion among the several physicians she had consulted and had a roentgenogram taken of the abdomen and pelvis. The picture showed the presence of a head and a foot of a fetus.

September, 1925, she began menstruating normally every twenty-eight days.

At this time her health was much improved. In fact, she had begun to regain her weight in June. She recovered the 40 pounds (18 Kg.) she lost in 1924. The weight continued to increase, so that at the time she entered the hospital, Jan. 14, 1926, she weighed 150 pounds (68 Kg.). The pulse rate was 82; the temperature, 98, and the respiration, 16.

Examination.—The patient was well nourished and developed, but was pale and anemic, and the abdomen was large and distended. She was 5 feet 6 inches (167.6 cm.) in height. The mouth, throat, heart and lungs were normal, as was also the blood pressure. The abdomen was completely distended from the symphysis below to the epigastrium above with many linear striae in the skin. Laboratory examination of the urine was negative, and the blood count was normal.

The family history was negative. The patient had two children living, aged 5 and 7, respectively. Both had been delivered normally. There was no history of a similar abnormality in the family.

When the vaginal examination was made, the cervix could not be palpated, nor could the outline of a head be felt. There was no engagement in the birth canal. The only thing noted vaginally was that the hand pushed against what was thought to be a sac and that the hand could not be forced beyond the normal location of the cervix. Therefore, in view of this history and the physical observations, I decided to operate.

Operation and Course.—January 15, a cesarean section was done, twenty months after the patient had first missed her menstrual period in May, 1924. A well developed and well nourished, but dead fetus was found, weighing 8 pounds 7 ounces (3.8 Kg.). It was a male showing little signs of necrosis.

The fetus was found in a large sac completely filling the abdominal cavity. The sac was adherent to the abdominal wall in front and above, to the transverse colon above and behind as well as the posterior abdominal wall, and to the small intestine below. So completely was the transverse colon adherent to the sac that it would have been impossible to separate the transverse colon from it without destroying the blood supply to the intestine. The location of the sac and the organs to which it was adherent leads one to think that the ovum began to develop in this region after it was fertilized. In other words, this was as nearly as possible a primary pregnancy, since it is held that the ovum is always fertilized within the fallopian tubes.

The placenta had undergone calcification and was still adherent to the thick wall of the sac. The thickness of the sac was almost that of a normal uterus. This thickness was probably due to the length of time the fetus had been carried, nature having made an attempt to ensacculate it.

The uterus and tubes and the broad ligaments were normal. They were crowded down to the right and below the right side of the bladder, resting on the perineal floor. Neither the tube nor the broad ligament was attached to the sac in any way.

Only a small portion of the sac could be removed, since it was closely adherent to the small intestine and the colon as mentioned. The only part that I was able to remove was the anterior part, which was dissected loose from the anterior abdominal wall by sharp dissection.

The sac contained about three pints of yellowish amniotic fluid. This fluid contained a lot of skin and hair and did not have any definite odor. For that reason we believe that there was not much or very little secondary infection in the sac. The patient did not have any fever.

The sac was filled with two large packs, the ends of which were left sticking through the abdominal incision to take care of the possible oozing which resulted when the placenta was removed by sharp dissection. The patient was put to bed and given 5,000 cc. of physiologic sodium chloride solution subcutaneously and in four days she was in a normal condition.

The patient remained in the hospital twenty-one days and was discharged as well. Probably it was her youth and natural resistance that enabled her to carry a fetus more than ten months past the normal time for delivery. The same ruggedness enabled her to combat and eliminate from the body the excreta which accumulated, as the fetus had been dead for at least eight and a half months.

SUMMARY

1. The conditions leading to the diagnosis of "primary pregnancy" in this case were as nearly correct in fulfilling the requirements as one can hope to find, namely, the attachment to the anterior abdominal wall, diaphragm and transverse colon above and to the posterior abdominal wall, and to the intestines below. The uterus with its adnexa was clear so far as attachments were concerned.

2. It is possible for the patient and family physician to become confused by the reestablishment of normal menstruation at full term.

3. It is well to perform laparotomy on all patients who have such a history at full term when they fail to fall into labor, as thereby a child's life and possibly the mother's may be saved.

4. Considerably more attention should be given to vaginal examinations, for it was on the results of such examinations that the diagnosis was made.

5. The roentgen ray is, of course, valuable in such cases.

The Cerebellum.—Analysis of experimental and clinical observations on the physiology of the cerebellum has resulted in a state of confusion, relating not only to its possible function but also to the definitions of such parts of its functions as may be reflected by symptoms produced by removal or by stimulation.—Pollock and Davis: *Brain* **50,** 1927.

ELECTROTOME EXCISION OF PROSTATIC BAR*

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During the past four years, I have relieved fibrous obstructions at the bladder neck by the cutting high frequency current in fifty-one patients. The high frequency apparatus that I employ, the so-called electrotome, is similar in principle to the old spark gap machine. The rate of high frequency oscillation is "stepped up" about fourteen times. As this current cuts instead of burning and so leaves only a thin slough, the immediate postoperative bleeding is unimportant, and there is no late secondary hemorrhage. Hence, the current is applied through the panendoscope without opening the bladder.

The results in the first twenty-five patients of this group[1] were reported at the annual meeting of the American Urological Association in 1926.[2] In the present article I record my observations on the thirty patients operated on since then.

I employ this operation on three types of bladder neck obstruction: (1) fibrous contracture and bar; (2) fibrous scar following prostatectomy, and (3) carcinomatous bar, from a carcinoma of the prostate.

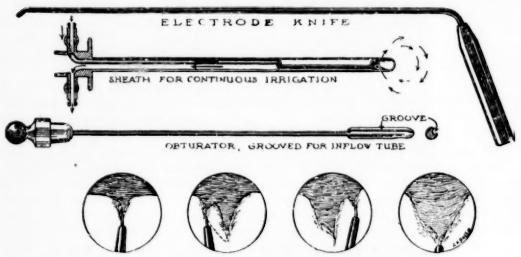

Fig. 1.—The electrode knife cutting the bladder neck at 6 o'clock, at 7 o'clock, at 5 o'clock, and at the end of the operation.

I do not employ this procedure in any type of adenomatous hypertrophy of the prostate. Prostatectomy is the method of choice in dealing with this form of obstruction.

To determine the limitations, I tried the cutting current in four cases of adenoma, but failed to give relief. All four patients have required subsequent prostatectomy.

Cystoscopically these patients show the following:

Case 1, right lateral lobe left by perineal prostatectomy.

Case 2, median and both lateral lobes.

Case 3, fibrous bar, median lobe, intra-urethral right lateral lobe.

Case 4, fibrous bar and intra-urethral lateral lobes.

I have modified Dr. McCarthy's panendoscope by placing a small metal tube from the inlet faucet to the end of the sheath. The water, after circulating in the posterior urethra and bladder, flows out through the other faucet, thereby giving continuous irrigation. The modification is not essential in performing the operation but it has the following advantages:

1. One may work without the interruption of changing the distending medium of the bladder.

2. The bubbles and any instrumentation bleeding are washed away.

3. A certain fixed distention of the posterior urethra and bladder may be maintained.

The majority of patients are given a caudal anesthetic (50 cc. of 1 per cent procaine hydrochloride). Gas or spinal anesthesia is required in a few cases.

The technic of the operation is as follows: A minimum amount of current reaches the patient when the rheostat of the apparatus is placed on 1 and the spark gap lever is opened about an inch. If the patient is well anesthetized, the cutting power of the current may be increased by moving the rheostat on 2 or 3 and opening the spark gap lever about 2 inches. I do most of my operations within this range.

The electrode knife is engaged on the bladder neck at the position of 6 on the clock dial and slowly pushed in and out between this point and the verumontanum. When this procedure is continued, the incision is widened and deepened as small bits of tissue are shaved off.

It is often more convenient to place the electrode in the desired position and move the electrode and urethroscope *en masse*. I take five or ten minutes to cut to an approximate depth of 1.5 cm. The gutter is widened by placing the electrode at 5 o'clock and cutting back and forth toward the verumontanum. Then the knife is engaged at 7 o'clock and the incision extended backward to the same point, the same depth being attempted as in the primary cut. Small tufts of white tissue are seen sticking up between the incisions. These may be sawed off by turning the knife blade sideways.

The procedure should be done with precision, taking perhaps twenty or twenty-five minutes, the electrode moved slowly, and the cut made deeply. When the bladder neck is properly excised, the base of the verumontanum, the valley in the posterior urethra, and the trigon should be on the same horizontal plane. The sandbar has been entirely dredged away.

A word of caution: The electrode should not be brought in contact with the sheath, as a slight short circuit is produced. (The patient notices a pricking sensation in the urethra.) In two of my earlier patients, I was not aware of this. They had difficulty controlling the urine for the first two weeks after operation. Following this period they had no further trouble. It is better to use dry cells for cystoscopic illumination to eliminate further the possibility of a short circuit.

TABLE 1.—*Classification as to Diagnosis*

Fibrous bar and contracture	22 patients
Carcinomatous bar (prostatic carcinoma)	5 patients
Fibrous scar after prostatectomy	3 patients

The thirty case histories were tabulated as shown in table 1.

The ages varied from 25 to 89. There was one patient in the second decade, four in the third, five in

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* Read before the Section on Urology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter will be sent by the author on receipt of a stamped addressed envelop.

1. Two of the patients in this group have been operated on again and have been relieved. The others have remained well.

2. Collings, C. W.: J. Urol. **16:** 545 (Dec.) 1926.

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the fourth, six in the fifth, eight in the sixth, five in the seventh, and one in the eighth.

The usual complaints were frequency, burning, difficulty and marked urgency. Seven patients had complete retention.

In the bar and contracture cases, the prostate by rectum felt small, irregular and firm throughout. When the instrument was passed into the bladder, an obstruction at the vesical outlet was encountered. It was often necessary to depress the ocular to get by the bar. A definite elevation of the floor of the bladder neck was seen as the instrument was withdrawn into the posterior urethra. In fifteen cases a marked basfond was noted, with the accompanying tilting of the trigon, and difficult visualization of the ureter orifices. Two patients had diverticula and cellules.

The residuum before operation is shown in table 2. The residuum after operation was from 15 to 30 cc. in six patients. The patient with the 30 cc. residuum on May 4, 1927, had had 760 cc. before operation on January 25. It sometimes takes several months before the maximum effect of the operation is attained.

TABLE 2.—*Residuum Before Operation*

Complete retention	7 patients
All urine through suprapubic fistula	2 patients
From 120 to 1,500 cc.	8 patients
From 30 to 100 cc.	13 patients

Twenty patients did not have any residuum. This group includes patients with a residuum before operation varying in the individual case from 30 cc. to complete retention.

W. B., a man, aged 65, referred by Dr. Archie Dean, may be cited as typical of this group. When seen, Dec. 7, 1926, he had had complete retention for the past three days, and overflow from retention for the past six months. The bladder neck was excised, December 9. An indwelling catheter was tied in the urethra for three days after the operation, during

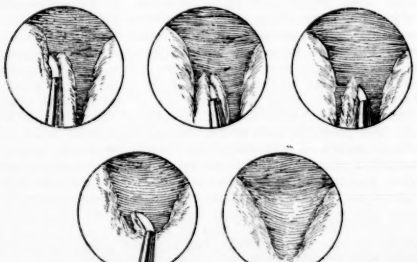

Fig. 2.—The knife excising bits of fibrous tissue at the vesical outlet from 5 to 7 o'clock.

which time the urine was pink. He voided continuously after the removal of the catheter and there was no bleeding. The residuum two weeks after operation was 90 cc. with burning at the end of urination; two months after operation there was no residuum and no burning. He now urinates by day every three or four hours and once at night.

There were two unimproved cases:

W. U., aged 68, with complete retention from carcinoma of the prostate, was operated on, July 9, 1926. A retention catheter was allowed to remain for three days after operation; the patient voided continuously after its removal, with 180 cc. of residuum. He died of pneumonia on the eleventh day after operation.

A Bellevue patient, P. K., aged 89, with carcinoma of the prostate, died two weeks after operation from generalized carcinomatosis. The postmortem showed a wide valley about 2 cm. deep from the bladder neck to the verumontanum; the surface of the wound was grayish yellow, with a few areas of phosphatic incrustation. The area of slough extended down into the tissues from 1 to 2 mm. (fig. 5).

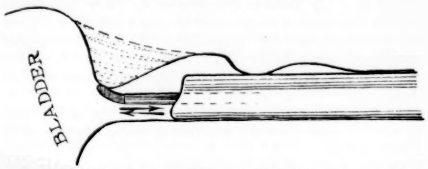

Fig. 3.—Cross-section of bladder neck showing electrode engaged on prostatic bar.

There were two patients with undetermined residuum:

M. W., aged 73, with a residuum of 240 cc. before operation, was operated on, Dec. 14, 1926, for a carcinomatous bar. He died of pneumonia nineteen days after operation. The patient's physician in the country reported that there had not been any difficulty with urination until forty-eight hours before death. At this time the patient developed complete retention.

In I. R., aged 40, a suprapubic cystotomy was performed in July, 1925, for vesical calculus by another surgeon. A suprapubic fistula persisted. A prostatic bar was excised, Jan. 4, 1927. He was then lost track of until May 11. At this time his physician reported that the abdominal wound had closed, the urine passed more freely and the residuum was less, the exact amount being undetermined.

The operative results in the twenty-five cases reported in 1926 persisted up to May, 1927, with two exceptions. Some patients have gone without further treatment as long as three years. In the two exceptions a second operation was performed for further reduction of the residuum.

L. L., aged 62, was operated on, Dec. 26, 1925, for contracture. The residuum before operation was 390 cc., with a frequency of every hour by day and every two hours at night. The residuum was reduced to 90 cc. However, the frequency of every two hours by day and two times at night was still annoying. Jan. 25, 1927, the panendoscope showed a well defined furrow about 1 cm. deep, covered with normal appearing mucous membrane: this furrow was deepened. May 9, the residuum was 20 cc. The patient states that he can go without urinating three hours during the day, and is up once or not at all at night.

F. W., aged 37, had had 360 cc. of residuum before operation. This was reduced to 120 cc. A second operation further reduced the residual urine to 30 cc.

POSTOPERATIVE TREATMENT AND COMPLICATIONS

1. An indwelling catheter is tied in the urethra of a patient with complete retention or a residuum over 200 cc.

2. The bleeding after operation has never been more than enough to color the urine. A minority show small clots the size of a small grape for the first week or ten days.

I. M., aged 57, developed complete retention from a questionable carcinomatous bar, which followed a resection of the rectum for carcinoma. It was necessary to reinsert the indwelling catheter because of bleeding after its removal on the third day. The passage of pink urine stopped shortly thereafter.

I recently operated on three patients in my office. Two had an uneventful convalescence; the third had to be sent into the hospital for several days with an indwelling catheter to control the bleeding. It is wise to do this operation in a hospital, and to keep the patient quiet for a day or two afterward.

3. In order to control infection, postoperative intermittent catheterization and bladder irrigation has been employed in a number of cases. This sometimes excites bleeding. My present practice is to leave a catheter tied in the urethra of patients having more than 200 cc. of residuum before operation. A catheter is not employed immediately after operation for the other patients, but in all patients the bladder is washed two weeks after operation as a control measure.

4. Burning during and at the end of urination may be present intermittently for two or three weeks, rarely three or four.

5. Two of our patients developed epididymitis.

SUMMARY

1. The cutting high frequency current, in the form of the electrotome, will efficiently cut through fibrous, scar and carcinomatous tissue at the bladder neck.

2. Fifty-one patients have been relieved from bladder neck obstruction by this direct vision method. Two patients died of pneumonia and one of carcinomatosis, and of one there is no record of the present residuum.

3. The current cuts instead of cauterizing; hence, there is no thick slough or secondary hemorrhage.

4. Primary bleeding has never been more than enough to make the urine pink or sherry colored with small clots at times.

5. The procedure described is a minor one, giving relief to major lesions, apparently without grave complications.

983 Park Avenue.

ABSTRACT OF DISCUSSION

DR. ALEXANDER RANDALL, Philadelphia: Dr. Collings has added a very valuable instrument of perfection to our armamentarium. I know it has been a long road and fraught with many difficulties. At first it was necessary to work with it under oil, and only recently has he been able to get an instrument that fulgurates under water. Dr. Collings has more or less decried his own good work, but from personal experience I can assert that it is one of the prettiest pieces of work one can perform. It is well worth while to have this cautery before one's vision, to have it work under freely flowing water, to have current sufficient to cause active coagulation and cauterization, and to see the material whittled away, with the knowledge that one is doing good, accurate work, which will relieve the patient's symptoms. This instrument is made for a definite purpose. It is not like many instruments, made for a vast field of utility, but is intended for use in a definite condition, and I think should be kept for that purpose. It is for the relief of true contracture of the vesical orifice or true fibrotic median bars and for the relief of obstruction of cicatricial origin, and it can be used in a few cases in that hopeless condition associated with inoperable carcinoma. I urge that the instrument be kept for these uses, and that it should not be used in benign hypertrophies. Dr. Collings was fair enough to recite three cases of prostatic hypertrophy in which he used it and hoped to get good results, but had 100 per cent failure. He is honest in bringing this forward, and I think that it needs emphasis rather more than anything else.

DR. E. L. KEYES, New York: I have personal knowledge of the work of Dr. Collings from its beginning, and of three cases that he has treated for me. One of the cases of prostatic adenoma to which he referred was mine. I had done a perineal prostatectomy for this patient but failed to relieve him, because I left in a piece of the right lateral lobe. I told Dr. Collings that I had a case for him if he would come to my hospital and operate on the patient. I did not tell him what it was. His soul was filled with despair when he found out what the condition was, and he said he could not do any good. He told the truth so far as the patient was concerned, but it did do me good, for he produced a pathologic condition which I had never seen before. Later, when the patient developed a stone, and I had to do a suprapubic operation, I found a growth at the point at which Dr. Collings had burned the nubbin of the lateral lobe. He had cut off the blood supply from the lobe and made it into a flabby tab, which unfortunately interfered with urination as effectively as before. I have sent Dr. Collings two other patients with the usual symptoms of residual urine, straining and so forth, and both have come back to me relieved of their trouble and entirely happy over the result of the operation. The immediate results are all that the author claims.

DR. GEORGE R. LIVERMORE, Memphis, Tenn.: I have used this method in a few cases and it certainly is a great advance. In the old days, when we had only the old punch operation, I used fulguration with some improvement, but this instrument is a vast improvement over simple fulguration and will cut out a furrow if one persists. I have found, as the author says, that it does not always cut so clearly as the pictures would lead one to believe; but if one persists it does make a furrow and bring about good results. I consider the instrument of great value.

DR. A. E. MACKAY, Portland, Ore.: I have observed excellent results from this operation. The freedom from hemorrhage, the clear vision and precision of result during the operation form a trinity of effort greatly to be desired. I am one of a group that does not see many of these cases, but we do see them occasionally and we must perform an operation that will not give bad results. We are subjected to criticism when we perform these rare operations, and any procedure that will promise certainty of results is greatly to be desired.

DR. EDWIN BEER, New York: I believe that Dr. Collings has given us a real contribution. There is no doubt from the demonstrations he has given me and from the experience which I have had myself that this electric cutting current is admirably suited for cutting contractures of the neck of the bladder. Whether it will be equally suited to some of the other conditions in which he is trying it out remains to be seen. One important thing is to follow up the end-results. In the old types of operation for cutting these obstructions, with the other methods of cauterization and subsequently with the high frequency current through the cystoscope, recurrences have been fairly frequent. The great advantage of Dr. Collings' method is that if the patient does have a recurrence, the same procedure can be carried out again. The experience with the high frequency current with the old type modality showed that danger developed when the slough separated, and years ago, in one patient in whom I burned a groove in the posterior circumference of the bar, there was an almost fatal hemorrhage twenty-two days later. According to Dr. Collings' experience, late hemorrhages are very rare with his method, if they occur at all. It is interesting to note that when I was on a recent visit to Papin in Paris, he told me that Luys had reported admirable results from burning out the prostate with the high frequency current, but that he had had a number of individuals come to him for removal of the prostate with almost the same condition as before the high frequency "fourage." The ease with which Dr. Collings can apply his method and the prompt and remarkable results which he obtains lead me to believe that we are to have better results with this transurethral method of relieving bar obstruction than with any method heretofore used.

DR. B. S. BARRINGER, New York: One point has not been emphasized sufficiently, and that is that Dr. Collings' burns do not form an immediate slough. Those methods that do (fulguration, radium) I am very much afraid of, for in those cases I think that we are apt to get severe hemorrhage and severe infection at times. With this method there is practically no sloughing when the operation is done. I was par-

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ticularly interested in the operation as applied to carcinoma of the prostate. I have seen Dr. Collings use the method but I have not used it in carcinoma of the prostate, thinking that it did not cut out a large enough piece to enable the patient to empty the bladder. I believe that there are three causes of retention, one from fibrous growths, one from an inflammatory hypertrophy of the prostate, and one from true carcinoma growing into the bladder neck. I think that the method could be successfully used in the small carcinomatous obstructions, and I shall certainly use it in attempting to control residual urine in carcinoma of the prostate.

DR. C. W. COLLINGS, New York: In reference to Dr. Barringer's remarks, if one examines these patients cystoscopically a week or ten days after operation, one sees a slight slough. The only type of prostatic carcinoma that we use this operation on is the type that infiltrates the bladder neck, producing an obstructing bar. This obstruction can be whittled away entirely and the residuum reduced.

THE CIRCULATORY COLLAPSE IN DIPHTHERIA*

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The most frequent cause of death today in diphtheria is circulatory collapse; but as to the mechanism the failure of which is responsible for the collapse, there is still no agreement. The pathologic changes that are produced by the toxin have been studied extensively, but even regarding them there still remain some differences of opinion. Since there is no agreement concerning the anatomic changes produced by the poison, how much more likely is it that there should be a divergence of views regarding the part these changes may play in bringing about the failure of the circulation. Practically every part of the vascular system has been blamed for the trouble—heart, vasomotor center, vessels and peripheral nerves. All have been found to be involved by certain workers and, on the other hand, each has been absolved from participation in the difficulty by other experimenters, so that there is no agreement today as to where the trouble lies.

It is unnecessary to review the extensive literature of the subject, as this was covered by Warthin [1] when he reported the pathologic observations in a series of cases. He concluded that the essential lesion in the diphtheritic heart is a toxic, parenchymatous, hyaline degeneration, associated often with fatty changes or cloudy swelling or a simple necrosis. To illustrate the differences of opinion, we have only to compare this view with that expressed by Loth,[2] who says that in her series of nineteen cases true myocarditis was present in only one and that she had not been able to demonstrate any specific myocardial lesion as being due to the diphtheritic toxin.

A valuable addition to our knowledge of the subject is contributed by Marvin [3] in his paper on the effect of diphtheria on the cardiovascular system. After a critical survey of the literature on experimental diphtheria he calls attention to the fact that it is impossible to draw any final conclusions in the matter, the views of the various workers are so discordant. He says that it is agreed by all that after the injection of the toxin there is a latent period of many hours followed by a rapid fall of blood pressure with death in a short time. The views regarding the cause of this collapse he concludes are divided. Some regard it as due to vasomotor paralysis; others feel that the myocardial degeneration is the primary cause, while still others consider that both factors are involved. In his study of almost a hundred clinical cases, Marvin did not find any evidence to prove that in some the heart was primarily affected while in others the primary injury was to the peripheral circulation, as was asserted by Gunson.[4] He did find, however, that in every patient showing signs of circulatory impairment there was evidence of myocardial failure. Widespread myocarditis was shown by postmortem examination in five cases. There would not seem, therefore, to be the slightest doubt about the presence of myocarditis in clinical diphtheria with circulatory impairment were it not for reports such as that by Loth. On the other hand, there might be a question as to the rôle that the myocarditis plays in the efficiency of the heart.

One of the earliest papers tending to show that the heart was not primarily involved in the circulatory collapse was that by Romberg [5] and his co-workers. They concluded that the primary trouble was failure of the vasomotor mechanism, as stimuli which in normal animals cause an increase in blood pressure are in diphtheritic animals largely ineffective. The failure in such cases is not cardiac because when blood is furnished the heart by means of abdominal massage it quickly responds with an increase in strength.

Several papers dealing with the experimental aspects of the question have to be disregarded, at least in any discussion of their relation to clinical diphtheria, as the conditions under which the experiments were carried out were such that it is impossible to transfer the results to man. The objection to such experiments is usually that overwhelming doses of toxin were given, doses which caused death of the animals in such a brief time that typical pathologic changes could not possibly have been produced. For instance, von Stejskals [6] gave 10 cc. of toxin intravenously to dogs and then made observations as early as fourteen minutes after the administration. Again, in other animals, doses as high as from 15 to 22 Gm. of toxin were given, causing death in an hour or two. Conclusions drawn from such experiments could not possibly be transferred to the human subject, the conditions are so totally unlike.

The same criticism may be made of the work of MacCallum,[7] who also injected massive doses of toxin intravenously and then examined the efficiency of the hearts only a few hours later. Here, too, it is impossible to transfer such results to man, especially as no report on the postmortem observations was made.

Failure of the vasomotor center as a possible cause of the circulatory failure was further emphasized by Enriquez and Hallion.[8] They reported that during the course of the intoxication the vasomotor center was paralyzed, as shown by the fact that stimulation of the sensory nerves no longer caused an increase in pressure, although the vessels could still respond to stimuli, indicating that the trouble was not peripheral.

* From the Laboratory of Pharmacology of the University of Michigan.
* Read before the Meeting of the Association of American Physicians, Atlantic City, N. J., May 3, 1927.

1. Warthin, A. S.: J. Infect. Dis. **35**: 32 (July) 1924.
2. Loth, Mathilde: The Heart in Diphtheria, Arch. Int. Med. **31**: 637 (May) 1923.
3. Marvin, H. M.: Effect of Diphtheria on Cardiovascular System, Am. J. Dis. Child. **29**: 433 (April) 1925.
4. Gunson, E. B.: Lancet **2**: 670 (Nov. 3) 1917.
5. Romberg: Deutches Arch. f. klin. Med. **64**: 652, 1899.
6. Von Stejskals: Ztschr. f. klin. Med. **44**: 367, 1902.
7. MacCallum: Am. J. M. Sc. **147**: 37, 1914.
8. Enriquez and Hallion: Arch. de physiol. et de path. gén., 1898.

Yabe,[9] one of the most recent writers on the subject, also came to the conclusion that the vasomotor center was primarily affected. He found that if the abdominal aorta in cats was clamped there resulted a prompt increase in blood pressure, showing that the poisoned heart still functioned well. Reflex stimulation of the vasomotor center was less effective than in normal animals, while direct stimulation of the splanchnics produced similar effects in both groups of animals. The latter observation, indicating that the peripheral vasomotor nerves were intact, leaves the center as the point involved. Further comment will be made on these observations later.

An important paper dealing with the condition of the vasomotor center and tending to prove that it is not paralyzed is furnished by Porter and Pratt.[10] These workers, using rabbits injected with toxin, found that the reflex response from depressor and sciatic stimulation was the same in both normal and poisoned animals. In these experiments the observations were made "some hours before death would probably have taken place," and under these conditions the center was found to respond normally. However, the point is well taken by critics of this work that the fatal collapse is a very acute process and may run its course in half an hour, while in these experiments, with an expected death time of fifty hours after injection, the measurements were made about thirty-nine hours after the toxin was given, or eleven hours before death would probably have taken place. Under such conditions there is little doubt that the center would have been found to respond normally; but that fact does not furnish any evidence as to what would have been its condition just before death would naturally have occurred. However, this criticism is largely nullified by two experiments which were carried out in rabbits which had died from the toxin but which had been resuscitated, and in which, by means of saline injections, the blood pressure had been brought back to 80 mm. of mercury. Under these conditions an examination of the activity of the center was made, and it was found to react normally. As a result of the latter experiments especially, the conclusion that the center is not functionally impaired in diphtheria would seem to be justified.

Since the heart and the vasomotor center have been shown not to be primarily at fault as causes of the circulatory failure, attention must be diverted to the peripheral vasomotor mechanism and perhaps to the volume of circulating blood.

Brodie[11] was the first to call attention to the fact that the peripheral vessels were probably at fault. Owing to the fact that his paper was largely lacking in experimental details and that his conclusions were hard to reconcile with the prevailing clinical views, it has been largely ignored and its value minimized. Brodie concluded that since the heart, if it is perfused, will beat for hours after the death of the experimental animal, the cause of the fall in pressure must be in the vasomotor system or in the vessels, and that it is probably in the muscle of the arterial walls, although it may be in the vasomotor center. As the center has been shown by Porter and Pratt to respond normally, it would limit Brodie's explanation to the peripheral vessels.

An interesting clinical paper, and one which in this connection is quite suggestive, is that by Gunson,[4] previously referred to. In this communication, cases of diphtheria are divided into two groups: those in which there was cardiac inefficiency and those in which the circulatory failure is of vasomotor origin. In the latter group he says that there is a primary failure of the peripheral circulation with secondary cardiac embarrassment. He considers the symptoms as depending on a disturbed function of the nervous control of the peripheral circulation, disorder of the suprarenal gland playing an important part. This quite attractive classification has also been criticized as being inadequate, as it would largely ignore the fact that in a considerable proportion of cases myocardial involvement is demonstrated post mortem. Also in typical "vascular" cases the electrocardiogram will very often show cardiac changes. In spite of these and other arguments which have been made against this grouping of the cases, it is important as calling attention to the part that might be played by the peripheral vasomotor system.

Another possible factor in the circulatory failure is presented by Harding[12] in her comprehensive book embracing the results of her studies on the question. It is difficult to abstract her book and to represent her conclusions in brief form. She believes the main trouble to be a failure of circulatory fluid—an oligemia—which in late stages is probably mainly due to a faulty distribution of the blood, although there may actually be a quantitative diminution. The distributive oligemia may be due to a vascular relaxation, which is most marked in the splanchnic area and which may be explained by the theory of Brodie or on the basis of an action by the toxin on the central nervous system, or possibly on the suprarenals. Finally, diminished cardiac output due partly to myocardial weakness may play a part. As a consequence of this oligemia an anemia of the brain results, especially of the medullary centers.

It will be seen from this summary of a few of the papers on the subject, which is necessarily a very incomplete discussion of the question, that there is no agreement as to the part played in the circulatory failure by the different units embraced in the circulatory system. Our own experiments would tend to show that from the functional standpoint the heart is not primarily involved. Attention was called to the fact in a paper by Edmunds and Cooper[13] (as indeed it had been by other writers) that the heart of an animal dying of circulatory failure due to diphtheria is still capable under certain conditions of maintaining a very satisfactory blood pressure. For instance, in one of their experiments, a dog which was comatose, with a blood pressure of 10 mm. of mercury, under the influence of injections of dextrose and the use of epinephrine and pituitary extract maintained a pressure between 100 and 110 mm. for a considerable time, and yet the heart showed microscopically extensive changes in the myocardium.

It is evident that, in spite of profound degenerative changes, the heart must possess considerable reserve in order to maintain such a pressure. It was pointed out that what such a heart needs is fluid. Blood would doubtless be best, but as a substitute 10 per cent dextrose solution acts well if given intravenously at a temperature of about 40 C. As soon as such a solution gets to the heart the organ begins to revive,

9. Yabe, S.: J. Pharmacol. & Exper. Therap. **19:** 1 (Feb.) 1922.
10. Porter and Pratt: Am. J. Physiol. **33:** 431, 1914.
11. Brodie: Brit. M. J. **2:** 128, 1899.
12. Harding: The Circulatory Failure of Diphtheria, University of London Press, 1920.
13. Edmunds, C. W., and Cooper, R. J.: Action of Cardiac Stimulants in Circulatory Failure Due to Diphtheria, J. A. M. A. **85:** 1798 (Dec. 5) 1925.

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and, as shown in the tracing reproduced herewith (fig. 1), there is a great increase in the pulse pressure. We have never failed to revive a dying heart in this manner, provided only that it is still beating when the dextrose reaches it. Some clinicians have expressed doubt as to whether it would be safe to resort to such measures in the case of human diphtheria—as to whether the dextrose transfusion might not put such a strain on the heart that it would give out at once. To judge by the results in experimental animals, and assuming that discretion would be used as to the quantity injected, there would not seem to be any danger of such an accident. What the heart needs is fluid and nutriment, and as soon as it gets it in the form of dextrose (or blood), it promptly revives. Of course, these statements must not be construed as overlooking the importance of the pathologic changes in the heart. They are meant only to emphasize the fact that a large reserve power is possessed by the heart, even though it is diseased; but we realize that a point must finally be reached when this reserve is no longer adequate and the heart will fail because of the myocardial degeneration. In the end, the myocardial changes are bound to be the winning factor, provided the animal or person has not died from some other source of circulatory failure earlier. It is with the possibility of other factors being involved that this paper deals.

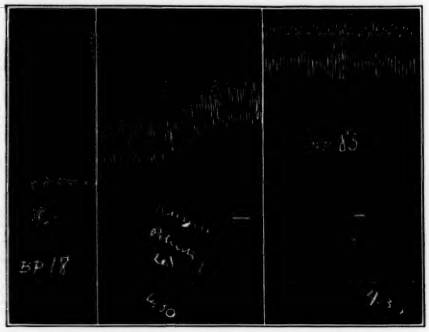

Fig. 1.—Blood pressure tracing from a dog dying from diphtheria toxin: Animal comatose; blood pressure 18 mm. At 4:26 the animal was given 100 cc. of 10 per cent dextrose solution; at 4:30 there was a great increase in pulse pressure and in the strength of the heart. Five units of pituitary extract was given. At 4:32 the blood pressure was raised by the pituitary extract to 85 mm.

Granting that the heart is not primarily involved and that the vasomotor center functions normally, an explanation for the failure of the circulation must be sought in the peripheral vessels or nerves. As was pointed out in the earlier paper by Edmunds and Cooper, in any study of this subject the most striking feature in the course of a blood pressure examination is the partial or even complete failure of epinephrine to bring about an increase in the pressure. In certain cases, the failure to respond is complete, and doses of even 1 or 2 cc. of a 1:1,000 solution will not bring about any rise. In normal animals, as is well known, doses even a minute fraction of the size named are highly active. An example of such a failure to react is shown in the tracing reproduced in figure 2. In other animals epinephrine may elicit a response but much larger quantities are required than in normal animals, and the quantitative difference in response becomes more marked as the fatal collapse progresses. If the test is made early when the blood pressure fall has just begun and the pressure is still fairly good, say from 60 to 70 mm. of mercury, then the response approaches normal. If, however, the collapse has progressed further, the response is diminished until, as in the tracing shown, the results of injections of epinephrine are nil. There is, however, a difference in animals, as in some cats we have found a fair response from the drug even though it was given late in the course of the poisoning.

An important difference in response from that shown by epinephrine is that produced by extracts of the pituitary gland. If they have been preceded by injections of dextrose to give the needed volume of circulating fluid, pituitary extracts usually elicit a very favorable response, as is shown in figure 1. In this instance, a dog dying from diphtheria had a blood pressure of 18 mm. After an injection of 10 per cent dextrose, the pressure was raised to 30 mm., and the heart, as shown by the pulse pressure, was greatly strengthened. A small dose of pituitary extract given at this time promptly raised the pressure to 85 mm., with a still greater increase in the pulse wave. The favorable response to pituitary extract is not alone of clinical importance; it is also of considerable scientific interest as it demonstrates that the muscle of the blood vessels can react normally and that the cause of the failure is not in the muscle as Brodie supposed. On the other hand, the evidence furnished by the response to epinephrine would suggest that the trouble is in the receptive substance (myoneural junction). But if the difficulty is in this structure, it should affect the activity of the splanchnic nerves. These have been examined by earlier workers and reported normal. The most recent writer on this aspect of the subject is Yabe[9] but, unfortunately, he made the same mistake as other workers of examining the activity of these nerves too soon after the toxin had been injected (from eighteen to twenty-four hours). It is well known that the circulatory collapse occurs with considerable rapidity, the pressure falling perhaps to zero within an hour or two.

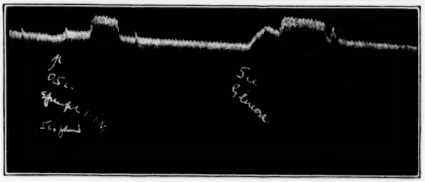

Fig. 2.—Tracing from a cat dying from diphtheria, illustrating the complete failure of epinephrine to raise the blood pressure. The first injection was of 0.5 cc. of epinephrine solution 1:1,000, diluted to 5 cc. with salt solution; with the second injection, a control injection of 5 cc. of dextrose solution was given.

Up to that time, the pressure may have been normal or nearly so. According to the paper quoted, the examination of the splanchnics was made many hours before death would have occurred normally from the toxin. Such evidence as to the condition of the nerves is, of course, worthless. The changes are acute and must be studied at the time they are taking place, that is, while the pressure collapse is progressing and not some hours earlier. We have examined the condition of the

splanchnics in many of our animals, and have noted the same changes as occurred with the use of epinephrine. We have found all degrees of activity even to complete paralysis. In general, the splanchnic and epinephrine failures, so far as we have studied them, seem to run parallel, and doubtless the splanchnic weakness is due to the action of the toxin on the receptive substance by which the nerve impulse is transmitted to the muscle substance proper.

A further study of the question was made by using the perfusion method. For this purpose, guinea-pigs were utilized. They were injected with toxin, and then, just as death occurred, the thorax was opened and a cannula was inserted into the aorta pointing toward the periphery and connected with a container filled with warm Ringer's solution. Constant pressure and temperature (38 C.) were maintained during the experiment. The outflow from an opening in the abdominal vena cava was measured at three minute intervals. When a constant flow had been reached, new Ringer's solution, containing either epinephrine or pituitary, was introduced under exactly similar conditions, the measurements of the outflow being continued. Control experiments with normal pigs were made in like manner.

The results of the experiments in which pituitary extract was used will be given first. As was to be expected, quantitative differences in the vasoconstriction as shown by the diminution of outflow in different pigs were found, so that such figures could not be used as a standard for comparison. However, a very satisfactory standard proved to be the greatest dilution of the pituitary extract that would produce a definite lessening in the outflow. In averaging the results from a considerable number of satisfactory experiments, we could not detect any quantitative difference in active perfusion concentration between the normal and the diphtheritic animals. Speaking in terms of the standard U. S. P. pituitary powder, we found that a dilution of 1:7,000,000 was without effect; 1:6,500,000 had a doubtful effect, while 1:6,000,000 was definitely positive. It would not be surprising if a more delicate end-reaction might show differences in the response to pituitary between normal and diphtheritic pigs, but by this method we could not detect any. These results are in harmony with those found in the blood pressure experiments; viz., that the vessels of diphtheritic animals react well to pituitary.

The experiments with epinephrine were carried out under like conditions, with the exception that we had to omit sodium bicarbonate from the Ringer's solution. With fairly high concentrations of epinephrine we found that the sodium bicarbonate did not have a distinct influence, but when we used the alkaloid in great dilution the warm alkaline fluid destroyed it so rapidly that we could not get satisfactory results. A definite diminution in outflow would appear which increased for two or three readings, and then this would pass off and the outflow return to normal, the perfusion fluid in the meantime turning pink. Omission of the bicarbonate avoided this difficulty. The epinephrine used was a specially purified preparation which we had had in the laboratory for some time, and it in turn was compared by the biologic assay method with synthetic L-suprarenin base (Metz). The two preparations were found to be practically identical in strength.

The results of our experiments on the normal control pigs were as follows: A dilution of epinephrine of 1:3,500,000 was without effect, but 1:3,000,000 produced a definite vasoconstriction as shown by the diminished outflow. With the diphtheritic pigs, 1:3,000,000 had no effect whatever; 1:2,500,000 had a very doubtful effect, but 1:2,000,000 produced a definitely positive effect. In other words, it required about a 50 per cent higher concentration of epinephrine to produce vasoconstriction in the diphtheritic pigs than it did in the normal animals. The results obtained with concentrations higher than those mentioned were suggestive but not conclusive. With solutions of from 1:500,000 to 1:1,000,000 the reaction was always more prompt with the normal animals and the constriction was usually greater, but exceptions did occur which made it hard to draw positive conclusions. The difference in reaction to the high dilutions was, however, clear cut and positive.

These results then confirm our observations on the blood pressure, and point to the receptive substance (myoneural junction) as being the part of the nervous mechanism which is attacked by the toxin. It is not probable that the action goes on to complete paralysis in all cases. Indeed, the reverse is probably more commonly true. Doubtless some animals die of the lowered blood pressure with resulting anemia of the medulla before the paralytic action is complete, but there can be no doubt that the loss of control of the vessels by the splanchnic nerves is an important factor in bringing about the fatal circulatory collapse.

Finally, attention should be called to the fact that it has been suggested that the capillaries also might be affected; indeed, a comparison has been made between the action of arsenic and of the diphtheritic toxin so far as an effect on these structures is concerned. However, the likeness is not a striking one, as there are certainly few symptoms in diphtheria resembling those of arsenic. Nevertheless, the hemorrhagic areas which are found under the endocardium and epicardium, as well as in other localities, do suggest a capillary injury, and this possibility is to be examined into in the immediate future.

For the present, the evidence is that the fatal circulatory collapse is due primarily to an action of the toxin on the receptive substance of the splanchnic nerves, producing a loss of control of the abdominal vessels by these nerves. The vessels relax and the blood pressure falls, resulting in a deficiency in the amount of blood returned to the heart. The general arterial pressure falls also, causing an anemia of the medullary centers and possibly death. There is therefore a distributive oligemia from the failure of the splanchnics and, in addition, profound myocardial changes. The importance of the latter in the functional activity of the heart it is impossible to estimate.

Value of Endowment for Research.—It is doubtful if a real scientist has ever been made by the endowment of research. All that it has done—and that is a good deal—has been to enable some few gifted men to devote more of their time to the advancement of knowledge. But these real scientists are generally men of wide and diverse interests, and their contact with the realities of life has played no small part in further developing in them many of the qualities which have made them true seekers after knowledge. No, grants to science never will make genuine scientists although, if of a temporary nature, they may help to discover them. Money is better used to further the progress of those who have shown that they possess, properly balanced, the gifts of imagination and criticism and the power of application.—Paton, D. N.: *Edinburgh M. J.* **35**:10 (Jan.) 1928.

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CONTRACTION AND EVACUATION OF THE GALLBLADDER BY A PURIFIED "SECRETIN" PREPARATION

PRELIMINARY REPORT OF AN EXPERIMENTAL STUDY *

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AND
ERIC OLDBERG, M.S.
CHICAGO

For some time we have been much concerned with the highly discussed question of the mechanism of evacuation of the gallbladder. A consideration of the results obtained by Boyden, Whitaker, Higgins and Mann, Burget and others,[1] from such procedures as the feeding of egg yolk and fat, and the effect of transfusion of the blood of fed animals on the emptying of the gallbladder, led us directly to the conviction that the effect of intravenous administration of "secretin" preparations must be thoroughly studied. With this objective in mind, we have performed several series of experiments, the results of which prove to be exceptionally significant.

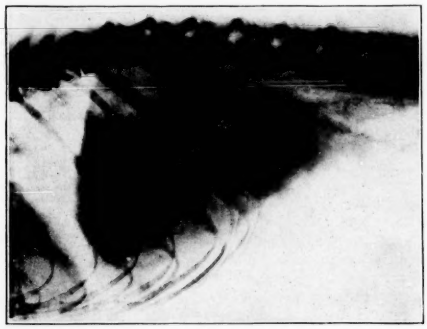

Fig. 1.—Appearance at 9:20, just prior to the injection.

METHODS AND RESULTS

It was necessary, before such a study could be initiated, to prepare highly purified preparations of "secretin." This has been done by Ivy, Kloster and Lueth[2] starting with the preparation of Weaver, Luckhardt and Koch.[3] Responses of the pancreas have been obtained in 10 kilogram dogs with less than 1 milligram of material.

One series of experiments was performed as follows: A cat was given barbital, a cannula was inserted into the pancreatic duct, and a cannula was inserted into the fundus of the gallbladder, which then was attached to a recording tambour. In some experiments, a cannula was inserted into the common bile duct instead of the pancreatic duct. It was found that when one cat's dose of "secretin" was injected intravenously, the intragallbladder pressure was definitely raised after a latent period of from thirty to sixty seconds, frequently before the injection was completed and the needle withdrawn, and a minute or two before an increase in bile flow occurred. When the cystic duct was tied so as to rule out absolutely the possibility that

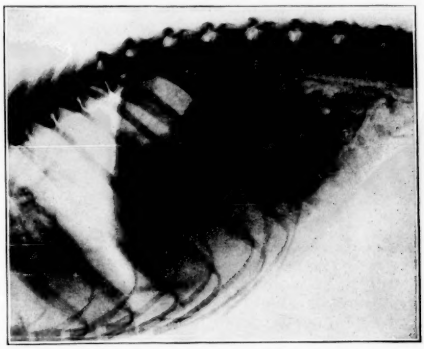

Fig. 2.—Appearance at 9:40, two minutes after the third injecton; some injection of the hepatic ducts.

the increase in pressure was due to the inflow of bile, the injection caused a contraction, but not to the extent that it did before. This decrease in contraction on ligating the cystic duct was due, we believe, to interference with the blood supply of the gallbladder, which we have found practically impossible to avoid.

Another series of experiments was performed as follows: Under morphine-ether anesthesia, with aseptic technic, the hepatic ducts of dogs were tied, and a cannula was inserted into the common bile duct before it entered the duodenal wall and connected with the exterior by a rubber tube. The dog was trained to lie quiet. From twelve to twenty-four hours later the rubber tube was connected to an upright glass tube, which in turn was connected to a recording tambour. The intravenous injection of one dog's dose of "secretin" caused the pressure, after a latent period of from

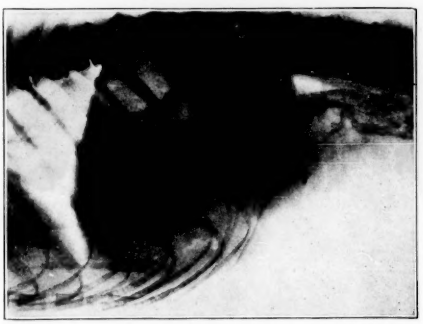

Fig. 3.—Appearance at 10 o'clock, two minutes after the fifth injection.

* From the Division of Physiology and Pharmacology, Northwestern University Medical School.

1. Whitaker, L. R.: The Mechanism of the Gallbladder and Its Relation to Cholelithiases, J. A. M. A. **88**: 1542 (May 14) 1927. Boyden, E. A.: A Study of the Behavior of the Human Gallbladder in Response to the Ingestion of Food, Together with Some Observations on the Mechanism of the Expulsion of Bile in Experimental Animals, Anat. Rec. **33**: 201, 1926. Burget, G. E.: Am. J. Physiol. **79**: 130 (Dec.) 1926. Copher, G. H.; Kodama, S., and Graham, E. A.: The Emptying of the Gallbladder, J. Exper. Med. **44**: 65 (July) 1926. Higgins, G. M., and Mann, F. C.: Observations on the Emptying of the Gallbladder, Am. J. Physiol. **78**: 339 (Oct.) 1926.

2. Ivy, A. C.; Kloster, G., and Lueth, H. C.: Unpublished data.

3. Weaver, M. M.; Luckhardt, A. B., and Koch, F. C.: Preparation of a Potent Vasodilatin-Free Secretin, J. A. M. A. **87**: 640 (Aug. 28) 1926.

one to two minutes, to rise from 20 to 30 mm. of bile pressure, where it was maintained for from thirty minutes to one hour, after which it gradually returned to normal. When one dog's dose of "secretin" was injected every four minutes, approximately the calculated rate from actual observations, for twenty minutes (five injections), the pressure rose from an original

Fig. 4.—Appearance at 10:20, two minutes after the seventh injection.

pressure of 180 mm. to 240 mm. of bile pressure. After about one hour it began slowly to decrease.

Another series of experiments was performed as follows: Under morphine-ether anesthesia and with aseptic technic, the gallbladder of a dog was filled with iodized oil (lipiodol) after the removal of an aliquot portion of bile (20 cc.). The dog was trained to lie quiet. Twenty-four hours later serial roentgenograms were made, one dog's dose of "secretin" being injected every ten minutes for one hour. At the end of half an hour after the first injection, the gallbladder is usually from one-third to one-half empty, and at the end of one hour it is from one-half to practically completely empty, the iodized oil being in the duodenum and the jejunum. The serial plates (every ten minutes) frequently reveal the cystic duct and common duct filled, and in several instances reveal that the oil

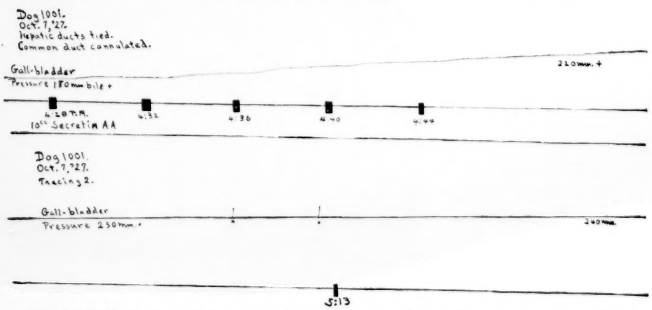

Fig. 5.—At the times specified on the tracings, purified "secretin" was injected. Note the steplike rise. About 5:30 the pressure began to decrease. *X* denotes a test of the capacity of the recording tambour.

has backed up into the hepatic ducts for from 1 to 3 cm. Gallbladder evacuation has been obtained with 3 mg. doses of our "secretin" preparation.

The intravenous injection of our "secretin" preparations does not have any detectable effect on the blood pressure, heart rate, respiratory rate, and the objective behavior of the animal.

COMMENT

These observations, we believe, prove not only that the gallbladder of the cat and dog "contracts," but also that a highly purified extract of the intestinal mucosa causes the gallbladder to evacuate, and that it is highly probable that the evacuation of the gallbladder is brought about partially, if not completely, by a hormone identical with "secretin," or a new hormone which controls the tonus of the gallbladder.

We wish to point out that the gallbladder does not contract like the stomach and the intestine, but that its contraction results in an increase in "postural tone," being in this respect more like the urinary bladder than any other hollow viscus. This analogy will be discussed more in detail in our complete paper. We also desire to point out that if this action of a "secretin" preparation is not due to a new hormone, it will be necessary to discard the term "secretin" and use a more inclusive term. Further purification of our preparation, which is under way, will settle this question.

THE VENOUS SPACES OF THE PENIS AS AN AVENUE FOR TRANSFUSION *

E. CLAY SHAW, M.D.
MIAMI, FLA.

Venipuncture is usually a simple procedure, but one occasionally encounters a patient whose superficial veins from obesity or other causes are almost inaccessible. Several years ago I was facing failure in an attempt to perform a blood transfusion on a patient whose few available veins had become thrombosed from previous venipuncture; the man was in a condition of extreme shock from persistent bleeding after prostatectomy and the blood was urgently needed. In this dilemma, it occurred to me that the blood might be introduced into the circulation through the venous spaces of the corpora cavernosa of the penis. The idea was acted on and was attended with a completely satisfactory result.

Before attempting another transfusion by this route, I determined the safety of the method on dogs. Repeated transfusions through the penile erectile spaces of salt solution, dextrose and citrated blood were performed on three dogs. The systemic results were the same as observed from the administration of these substances by venipuncture. Except for slight ecchymosis about the puncture site on the following day, no local changes were noted.

During the past five years I have encountered emergency situations that made it convenient to use this avenue to the circulation on seven occasions and have had no unpleasant complications, either immediate or remote. Since a search of the literature fails to reveal

* This work, begun at the Brady Urological Institute, Johns Hopkins Hospital, Baltimore, was continued at the Allison Hospital, Miami Beach, Fla.

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any account of this route having been previously employed for transfusion, a brief description of the technic and a summary of my experiences will be given.

The septums of the venous spaces and the capsule of the corpus cavernosum contain considerable fibromuscular tissue, the resistance of which must be at least partially overcome before a solution can be introduced into the venous spaces. The use of a syringe or pump is therefore preferable to the gravity method of introduction. Should the latter method be employed, it may be necessary to raise the level of the container to a height of from 6 to 8 feet. A needle with a long bevel and a large bore should be used; the ordinary spinal puncture needles are adaptable to this purpose.

The technic of injection is simple: The glans is firmly grasped between the thumb and the index finger so as to put the penis under slight tension; the needle is then passed obliquely through the skin of the dorsal surface of the body of the penis about 1 cm. lateral to the midline. A second thrust is necessary to penetrate the tough tunica albuginea surrounding the corpus cavernosum. The only structures to be avoided are the nerve and vessels on the dorsal surface and the urethra. No harm can be done if the point of the needle is kept away from the midline. I have never been able to aspirate blood from the flaccid penis. The injection of a few cubic centimeters of physiologic sodium chloride solution will show whether the needle has penetrated the capsule and is properly placed. The erectile tissue is of such a spongy nature that it is practically impossible for the needle to miss the venous lacunae.

The solution can be administered as rapidly as desired. In my cases the entire penis became slightly enlarged during the transfusion, but in no instance was there an erection.

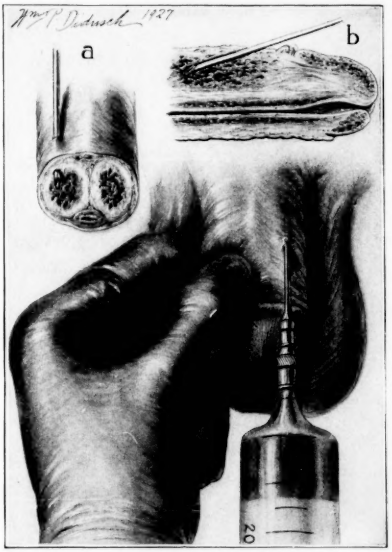
I have employed the corpus cavernosum route for the introduction of various substances into the blood stream on seven occasions. Three of the patients received 500 cc. of citrated blood, two were given physiologic sodium chloride solution, and the remaining two received 10 per cent dextrose. In the group receiving blood there was one moderate reaction of the character often observed following the transfusion of citrated blood. No untoward effect was noted in the group receiving salt and dextrose solutions.

In all cases the penis remained normal throughout the patient's period of observation in the hospital. In no instance was there any evidence of thrombosis. It was possible to communicate with three of these patients a year or more afterward, and all reported that there had been no change observed in either the appearance or the function of the organ.

These patients were all adults and I am unable to say whether the method is applicable to children. Neoarsphenamine and other irritating drugs have not been used. It is possible that such substances might produce thrombosis unless considerably diluted.

The following is a summary of the first case in which I transfused through the corpus cavernosum and illustrates the indications and the technic:

H., a man, aged 69, was admitted to the Brady Urological Institute, Johns Hopkins Hospital, June 9, 1923, with benign prostatic hypertrophy associated with obstructive symptoms. The physical examination was otherwise negative except for moderate hypertension. The phenolsulphonphthalein excretion was low and the blood urea slightly elevated. After two weeks' preparation the patient was subjected to perineal prostatectomy. There was an unusually large amount of blood lost during the operation, and oozing continued on his return to the ward. The usual methods of combating shock were employed, but the response was poor. After twenty-four hours the patient's condition became critical, he was semicomatose, and the pulse was weak and rapid. The systolic blood pressure had fallen to 70. An attempt was made to transfuse 500 cc. of citrated blood, but great difficulty was encountered in entering the small veins that had become thrombosed from punctures made before operation. Failing in this, several attempts were made to cut down on the larger veins, but this also resulted in failure; all the veins encountered were small, collapsed and quickly occluded. Nearly two hours had been consumed in these attempts, and in the meantime the patient's condition had become worse. At this juncture a large needle attached to a syringe filled with salt solution was plunged into the left corpus cavernosum in the manner shown in the illustration, and the solution rapidly injected. The penis remained flaccid while the entire 500 cc. of citrated blood was administered over a period of twenty-five minutes.



Manner of insertion of needle into corpus cavernosum: *a*, cross-section of penis and position of needle; *b*, sagittal section of penis, showing angle of needle.

There was no reaction and the patient's condition rapidly improved. The appearance of the penis remained unchanged. The patient was discharged from the hospital four weeks later apparently well. He responded to a letter of inquiry eighteen months afterward in which he stated that erections were normal and that his sexual life had not been interfered with by either the operation or the transfusion.

The corpus cavernosum route should not be used for transfusion unless the subcutaneous veins are inaccessible. The method has, therefore, only a very limited field, but it may be encouraging at times to know that in the male patient there is always one "available vein" for an emergency.

508 Huntington Building.

Cool Air for Tuberculosis.—In the general treatment of tuberculosis exposure to cool air, promoting tone and metabolism, is, I think, as important as exposure to light.—Hill, Leonard: *Brit. J. Tuberc.*, October, 1927.

SEMINAL VESICLE AND PROSTATIC FOCI IN PELVIC, PERIRECTAL AND ISCHIO-RECTAL SUPPURATION IN MALES *

J. H. MORRISSEY, M.D.
NEW YORK

Numerous observers reporting results and studies on the treatment of vesicosigmoidal and vesico-intestinal fistulas seem to be agreed that these conditions are essentially inflammatory in origin. It was at first believed that malignant conditions of the intestine with extension to the bladder were the common cause of these fistulas. Cripps, quoted by all writers on the subject, states that research into the subject shows indisputably that enterovesical fistulas are far more commonly the result of inflammatory mischief and thus are rendered more favorable as to prognosis than could have been anticipated.

ETIOLOGY AND SEX INCIDENCE

In his sixty-eight cases, forty-eight were demonstrated as inflammatory and two traumatic; nine were cancerous and nine doubtful. In the study of the subject, conclusive evidence was obtained that would indicate the fistulas to be the direct result of an abscess opening into both the bladder and the bowel. For weeks or months the patients suffered from slight urinary symptoms, occasionally merely complaining of an increased desire to void. Sudden relief of discomfort with the escape of pus from the rectum or bladder usually established the diagnosis. Further details on this condition are available from Sutton of the Mayo Clinic. He reports thirty-four cases with a very complete study of all details, including cystoscopy, and furnishes a most comprehensive tabulation of the etiologic factors involved in the production of these changes. Diverticulitis of the sigmoid is the main consideration as a causative factor. It is pointed out that degenerative changes may occur developing into neoplasm; as with other observers, here the chief symptom was bladder irritability. Rankin and Judd, and Cunningham review the literature and the etiology, in their personal cases, with the results of treatment.

TABLE 1.—*Cases of Ischiorectal Abscess*

Hospital	Total	Years	Male	Female	Percentage	Rectal Conditions Noted	Average Age	Operative Treatment
Bellevue....	196	7	182	14	7.1	12	37	All cases
New York..	92	9	86	6	6.5	3	34	All cases
City.....	50	5	50	6	12	4	41	All cases
							Postoperative Complications	Other Etiology
Woman's...	..	17	..	29	...	6	8	3

It was observed that these fistulas occurred in a striking majority in male patients. The few cases reported in women usually had an associated etiology, in the form either of birth injuries or of definite neoplastic changes which almost entirely ruled out the element of inflammation as a cause of the fistula. Cripps' series showed an average age of 38, and had only six women among the sixty-eight cases reported. Only two of these were inflammatory. In a measure, the inflammatory process resulting in a complete fistula must represent the end-result of a condition which had a focus in this area. Moreover, the proportionate majority of male patients would suggest strongly the factor of acute or chronic infection limited to some anatomic structure peculiar to the male. The question arises, therefore, as to what pathologic changes exist in a lesser form of which these fistulas may be the terminal condition.

Further consideration of this subject led me to the observation that in all pelvic suppurations which I had seen, particularly those about the rectum, there was a decided preponderance of males, varying from 89 to 96 per cent. In 1922, Drs. Leon Herman and Biard

TABLE 2.—*Associated Genito-Urinary and Rectal Conditions*

Hospital	Total Male Patients	Previous History of Gonorrheal Condition	Percentage	Rectal Conditions Noted	Onset	
					Acute	Chronic
Bellevue.....	182	134	68.4	5	165	17
New York.....	86	67	77.9	2	83	3
City.....	50	34	75	2	29	5

Stuart suggested that a genital focus was of great importance in these infections, and presented conclusive evidence to this effect in the form of careful case reports showing this as a cause. Most of us, if we think about it, will recall that all the patients we have seen have been males; and with difficulty do we remember a single case in which drainage of the ischiorectal fossa has been done in a female patient.

For the purpose of statistical survey,[1] case records of ischiorectal abscess from the New York Hospital, Bellevue Hospital and the City Hospital were studied, the total list comprising 400 cases. In addition, the records of the Woman's Hospital of New York City were searched for incidence of this condition in females. Only nine cases were seen in eight years, and a total of seventeen since the hospital was opened twenty years ago. Of the total, 13 per cent were secondary to gynecologic operations and 4 per cent were secondary to fistulas.

With regard to the other records, details are interesting. At the New York Hospital in a series of ninety-two cases, six, or 6.5 per cent, were in females; three of these showed an associated rectal condition. Of the eighty-six males, sixty-seven, or 77.9 per cent, had a previous record of a gonorrheal infection. The average age was 34, and no case occurred below the age of 18. Drainage was followed in every case by symptomatic cure. At Bellevue Hospital, 196 cases were studied, extending over a period of years. Fourteen, or 7.1 per cent, occurred in females; twelve cases were diagnosed as an associated fistula in ano. In the remainder, no mention was made of any rectal condition whatever. Of the male patients, 134, or 68.4 per cent, gave a history of antecedent gonorrheal infection. One case occurred in an infant, aged 6 months, and one in a boy, aged 14. The average age of the others was 36. The only death reported occurred from a kidney infection with an autopsy diagnosis of renal infarct.

In fifty cases from the City Hospital, six were in females. Three showed fistulas and were discharged with a sinus; one was a terminal affair, the patient dying of diabetes, and three others were postoperative

* Read before the Section on Urology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.

1. Material for the accompanying tabulations of these records was supplied through the courtesy of Dr. George Gray Ward of the Woman's Hospital, Drs. Eugene Pool and Oswald S. Lowsley of New York Hospital and Dr. John A. McCreery of Bellevue Hospital.

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complications of gynecologic surgery; in other words, a probable extension of infection from involvement of the submucosal lymphatics of the vagina and female perineum. The average of the males was somewhat higher, forty-one; but it must be noted that the average age of most patients in the New York City or municipal institutions such as the City and Metropolitan hospitals is somewhat higher than that in the private institutions. Of sixteen cases of superior pelvic, pelvirectal and posterior pelvirectal abscesses, which form the basis of this report, all were in men. In addition, a study of the personal records of Dr. Jerome M. Lynch, made available through his courtesy, included forty-two cases. These embraced the variety of abscess with numerous complications, and three of the cases were in females. One had a vesico-intestinal fistula secondary to a gynecologic operation; a pelvic cellulitis developed, and the fistula resulted.

COURSE OF RECTAL INFECTION

The textbooks on rectal disease treat the subject most lightly and are more concerned with the manner of treatment when complicated than the etiology. Indeed, the subject is so handled in each instance that one might suspect each author of having borrowed his material from another; all refer to the possibility of injury to the anal margin from fishbones or hard feces, rough paper and horseback riding. It is a fact that a break in the mucosa of the anus, and a chronic fissure, may be the starting point of an infection which extends into one of the several spaces of areolar tissue about the rectum. In a condition, however, which shows so marked a proportionate limitation to one sex, it would seem more or less obvious in a large measure that the anatomic structure peculiar to this sex was involved to the exclusion of some common cause which would operate in the two cases.

In this instance, these structures would seem the focus; the prostate and seminal vesicles and the tissue posterior to the bladder might be factors in causing

TABLE 3.—*Cases of Pelvic Abscess*

	Cases
Number	
Males	14
Females	0
	— 14
Etiology	
Trauma	3
Infection	6
Postoperative	5
	— 14
Location	
Ischiorectal (associated)	1
Superior pelvorectal	9
Posterior pelvorectal	4
	— 14
Rectal lesions absent in all cases	
History of previous gonorrhea	12

these abscesses. Because of the extension of a low grade infection fortified by the colon bacillus, the process extends beyond the prostate and vesicles into one of the several spaces about these structures and terminates in a small percentage of cases in a real intestinovesical fistula. This infection may be present without giving definite urinary symptoms, and can produce, depending on the direction and extent of the process, ischiorectal abscess, superior pelvorectal abscesses, posterior pelvorectal abscesses and, by lymphatic extension, localized suppuration about the kidney either outside the capsule or above the sheath of the psoas muscle.

In the prostatic suppurations commonly encountered, the starting point is usually in the prostatic urethra or the tissue of the prostate itself. Resistance of the capsule of Denonvillier usually operates in producing urinary symptoms and usually the infection is directed forward, terminating as a prostatic abscess. In the less acute infections, however, the process begins in the loose tissue surrounding the vesicles, and it may extend from the prostate by thrombosis or lymphatic channels. As exciting causes may be reckoned constipation, chilling of the buttocks, or any factor that lessens local resistance.

There are three main courses which the infection may take, each directed toward a cavity in which there is maximum space and minimum absorption. In the first instance, it burrows around the rectum and along the surface of the levator ani muscle. Penetrating the muscle at a point where rupture of the large blood vessels is least likely, the suppuration extends into the ischiorectal fossa. Here it is relatively unconfined, the

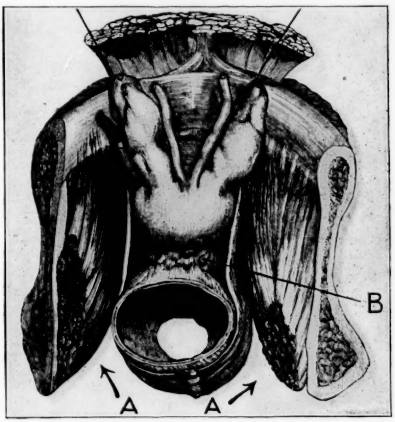

Fig. 1.—Diagram of the relative shape of the seminal vesicles, prostate, superior pelvirectal space and ischiorectal fossa as seen from behind: *A, A,* ischiorectal space; *B,* superior pelvirectal space.

loose areolar tissue of the space breaks down, and a sizable abscess is thereby formed. In some cases, this may burrow around the rectum and involve the space on the opposite side. The positions of these spaces are well defined, and they occupy definite anatomic limitations.

ANATOMIC FACTORS IN RECTAL DISEASE

The ischiorectal fossa is a wedge-shaped region, with its base extending between the tuberosity of the ischium and the anus. It is about 2.5 cm. in breadth, and its apex extends up from 5 to 7.5 cm. to the junction of the levator ani and internal obturator muscles. Its inner wall is formed by the levator ani and coccygeus muscles, and its outer wall by the obturator internus muscle. Its deepest extreme posterior portion constitutes the posterior recess. Here it is in relationship with the seminal vesicles and posterior prostatic region anteriorly, and it communicates superficially, beneath the coccygeal attachment of the external sphincter, with the fossa of the opposite side. A channel runs forward

between the prostate gland internally and the ischiopubic ramus externally. The deep and superficial transverse perinei muscles and the deep layer of the triangular ligament are superficial to it.

These anatomic factors come in for consideration at this point. It is necessary to review the lymphatic drainage of these structures, in order to demonstrate that they are separate and apart, both in their distribution and in their destination. Again, the anatomy of the levator ani muscle and the pelvic fascia is of significance in that they determine the direction and limit the spread of these infections. In this respect the pelvic fascia plays the same rôle as in the female, where it is important in directing a cellulitis away from the greater peritoneal cavity.

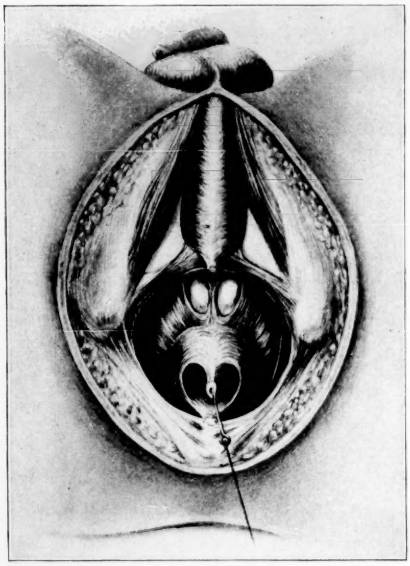

Fig. 2.—Dissection of perineum showing relationship between the surface of the prostate and the ischiorectal fossa. Levator ani muscle can be seen forming the base of the fossa. The central tendon has been severed.

In the distribution of the lymph channels it is noted that the lymphatic circulation, while it continues over large areas, is more or less circumscribed in distribution and that the lymph stream coming from various groups of organs is carried along very different paths. In the observation of pathologic conditions in various groups of organs there is noted a more or less definite lymphatic path, each vessel or group of vessels tending to drain a somewhat definite area of the network of lymphatics. The lymphatics of the rectum are actually a part of the great lymph system of the intestinal tract and quite apart from the lymphatics of the bladder, prostate and seminal vesicles. They do not intercommunicate at any portion, and an infection in one has no opportunity of being transmitted to another. Were these infections transmitted by the blood stream, it would be a different matter. The blood supply arises from several common sources. The nerve supply is a common one as well, and this explains the referred pain and symptomatology noted in many of the cases wherein a rectal condition will produce bladder symptoms and vice versa.

The lymphatics of the rectum, although belonging in large part to the pelvic region, should be considered as part of the intestinal lymphatics. Of the two primary networks, that of the muscular coat communicates with the mucosa network, and its collecting stems follow the same course as those of the deeper network. The collecting stems from the network of the rectal mucosa traverse the muscular coat, and, entering into relation with the anorectal nodes, are continued onward along the course of the superior hemorrhoidal vessels and open into the lower mesocolic nodes. From here, efferent vessels pass to the median lumbar nodes situated in the neighborhood of the origin of the inferior mesenteric artery and the lymphatics of the mesentery. The network of the anal mucosa sends numerous branches upward to communicate with the lower part of this rectal mucosa network.

Lymphatic extension, together with thrombosis, plays an important part in the spread and development of these infections. It may be well to point out that the lymphatics of these several structures maintain an entirely different course. This is clinically demonstrated in the well known fact that carcinoma of the prostate will involve the vesicles, spread into the pelvic spaces and metastasize along the course of the glands into the cavity of the sacrum and pelvis. Unless the rectum is injured by such an agent as radium, for example, the mucosa will remain intact throughout the extent of the disease.

The lymphatics of the prostate have their origin in networks surrounding the various acini of the gland. Stems pass to the surface, where they form a second network, and then pass symmetrically on either side of the median line. They finally terminate in one of the middle series of the iliac nodes accompanying the external iliac vessels, excepting a few fibers which end in one of the hypogastric nodes. Others pass at first backward on either side of the rectum, and then ascend on the anterior surface of the sacrum to terminate in the lateral sacral nodes or in the iliac nodes situated on the promontory of the sacrum. From the anterior surface of the gland, stems pass downward on either side of the membranous portion of the urethra and accompany the urethral lymphatics along the course of the internal pudic vessels. They finally terminate in one of the hypogastric nodes situated on these vessels.

The lymphatics of the seminal vesicles arise from two networks, one of which is situated in the mucosa and the other in the muscularis. Stems from the latter form a third network over the surfaces of the vesicles and from this efferents, two or three in number, pass to some of the hypogastric nodes.

This network of the bladder musculature is continuous at the neck of the bladder with that of the urethra and prostate gland, and, at its base, with the networks of the ureters and seminal vesicles; in the female, it is continuous with the vagina.

The pelvic lymphatic nodes are arranged along the courses of the principal vessels, and may conveniently be divided into three groups: the iliac, the hypogastric and the sacral nodes. These nodes receive the entire lymphatic supply of the genito-urinary system, as contrasted with the mesocolic and mesenteric nodes which receive the vessels coming from the rectum and anus.

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The lymphatics of the ureters are limited to the muscular coat and the surface of the ducts. The efferent branches arise from the portions above the level at which the ureter is crossed by the spermatic (ovarian) artery, and pass upward to unite with the renal efferents, or occasionally to terminate directly in the upper lateral lumbar nodes. The majority of the lymphatics arise at the point where the ureter crosses the spermatic or ovarian artery, and these vessels pass either to the

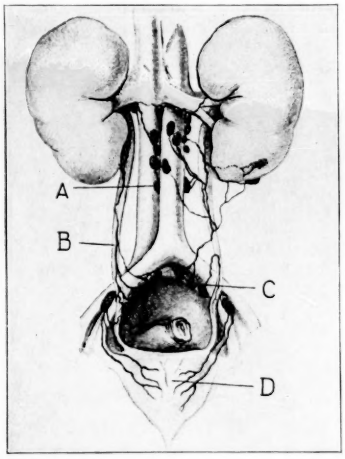

Fig. 3.—Lymphatics of the ureter, bladder and renal capsule, showing the interconnections betwen the various ducts: *A*, lateral lumbar node; *B*, ureter; *C*, iliac node; *D*, bladder.

lower lateral lumbar nodes, or else, in the case of the lower ones, to the upper iliac nodes. They unite with branches from the kidney. Of great importance is the fact that the efferents from the pelvic portions of the ureters either unite with the vessels passing from the bladder or else communicate directly with certain of the hypogastric nodes.

The lymphatics of the kidney which lie beneath the fibrous capsule and anastomatose with those of the pelvis communicate with both the cortical and the subserous networks. Kidney drainage is probably mainly through these. A few stems, however, pass toward the hilum, beneath the capsule, and unite with the terminal efferents from the cortical network, there being no direct connection between the network and the lumbar nodes. As already noted, the kidney has abundant communication with the network beneath the fibrous capsule, and through this with the cortical network, so that infections of the kidney tissue are readily communicated to the adipose capsule.

In other words, therefore, there is frequent intercommunication between the efferent vessels from the prostate, seminal vesicles and bladder wall, and the lymphatics of the ureter, pelvis, kidney cortex and capsule, and common groups of lymph nodes receive the drainage from this anastomosing circulation.

The pelvic fascia is attached above to the promontory of the sacrum and iliopectineal line of the pelvis, where it becomes continuous with the iliac fascia. It descends over the surface of the deep muscles of the pelvis, passes in front on the sides of the prostate gland, or, in the female, on the bladder, and is then attached on either side of the symphysis pubis. In its anterior portion this forms an investment of the prostate in the male and the base of the bladder in the female, and its under surface in this region is in contact with, and indeed may be regarded as being fused with, the superior layer of the triangular ligament.

The continuation downward over the pelvic diaphragm is termed the rectovesical fascia, from which extensions pass to the bladder, prostate gland and rectum. The term rectovesical has also been restricted to the portion of the sheet which extends between the rectum and the bladder and encloses the seminal vesicles. This layer is of great importance in connection with these suppurative changes in that it is responsible for the direction these abscesses take from their original focus. The brilliant studies of Wesson have entirely changed the conception of this fascia. Originally considered as one of the most dense and toughest fascias in the body, it is now known that in some areas it is of the consistency of tissue paper and only equally resistant.

It is further necessary to understand the particular anatomy of the levator ani muscle. This arises in front from the posterior surface of the pubes, near the symphysis, and midway between its upper and lower

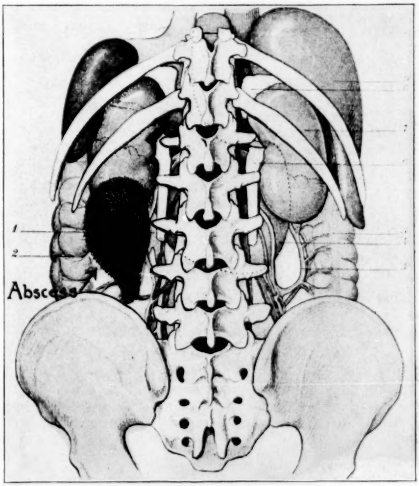

Fig. 4.—Location of a perirenal abscess secondary to trauma of the posterior urethra. This case was also complicated by a superior pelvirectal abscess operated on at an early date.

borders; behind, from the spine of the ischium, and between those points from the pelvic fascia along the line of attachment of the obturator fascia. Some of its fibers are also traceable upward in the substance of the pelvic fascia above the level of the obturator. From this extensive origin, the fibers of the levator proceed downward and inward toward the middle line of the floor of the pelvis.

There are also extensive connections with the fibers of the external sphincter; and lastly, the anterior muscular bundles pass between the rectum and the genitourinary passage, descending from the side of the prostate and the neighboring part of the urethra, with corresponding fibers from the muscle of the opposite

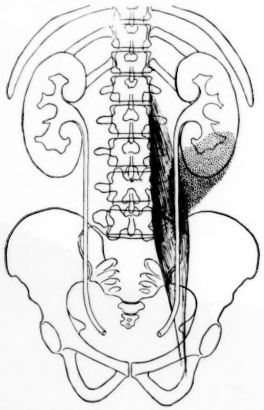

Fig. 5.—Perirenal abscess pointing anteriorly, secondary to punch operation on the vesical neck. This did not involve the kidney but existed as a palpable mass in front of the organ. Incision and drainage were done.

side, and blending also with those of the external sphincter and deep transverse perineal muscles.

SUMMARY

The possibility of these abscesses occurring should be borne in mind after all instrumental trauma to the posterior urethra; in severe and prolonged reactions following stricture operations; in punch and cutting operations on the vesical neck, in prostatic cases in which there is a prolonged inexplicable elevation of temperature either before or after operation; also in diverticulitis of the bladder, and particularly in cases of radium implantation of the prostate and bladder mucosa. The procedure for evacuating pus from the prostate in prostatic abscess may give rise to a superior pelvorectal abscess as a secondary complication.

It must be borne in mind that a very small proportion of these patients come to operation. As has been pointed out, there is a minimum of absorption from these areas and the process may quiet down. Symptoms in the severe cases, however, are a temperature ranging about 101 F., elevated in the afternoon, and a sense of rectal and perineal fulness, sometimes complicated by tenesmus. Bladder symptoms are usually present in the form of frequency and a sense of incomplete emptying. As the infection spreads there is usually a sharp rise in temperature, which remains elevated, and local tenderness develops. The finger must be introduced high into the rectum to feel the mass. Induration over the ischiorectal fossa is usually terminal, and at this point the diagnosis is obvious.

In the same manner as in other low grade infections of the seminal vesicles and prostate, this condition has a certain economic significance. It is not commonly seen in the well-to-do patient, but rather in those who may be inclined to neglect themselves physically. In the perineal abscesses, the tumor is easily palpable. It lies without the kidney capsule, and the urine examinations do not show any great amount of pus. When these are opened, the abscess will be found to contain only a moderate amount of frank pus, but considerable débris and much broken down tissue. These abscesses are not common: I have seen only four cases.

CONCLUSION

Finally, let me point out that this is not an attempt to encroach on the field of rectal surgery. It would seem, however, that the striking proportion of perineal abscesses in the male is as significant as pelvic suppuration in females. I believe that the two are analogous and differ only in the relative extraperitoneal and intraperitoneal position of the different foci. Just as pelvic suppuration and cellulitis with ultimate adhesions and sclerosis form the picture of uterine, tubal and ovarian infection in the female, so, too, prostatic, periprostatic, superior pelvorectal and perirenal infections in males are the result of a relatively consistent dissemination of the infection into these areas.

The ischiorectal abscess seems less likely to be connected with this cause, but the relationship between the ischiorectal fossae and the prostate, together with the distribution of the pelvic fascia and lymphatics, would make the same etiology more significant. Treatment tending toward evacuation should include thorough drainage of the vesical and prostatic region. For this a curved perineal incision should be used and the two ischiorectal fossae drained at the same time. The indications in the deeper abscesses are obvious. The general disapproval of urologists of the perineal method

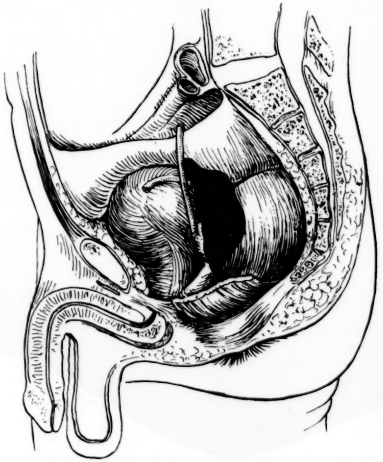

Fig. 6.—Location of a superior pelvorectal abscess. This is the usual location of these suppurations. Note the rectum posteriorly, bladder, seminal vesicles and ureter anteriorly. The mass is held away from the perineum by adhesions.

of prostatectomy does not relieve us of a responsibility for concealed suppuration within the perineum, presumably of genital origin, or the necessity of handling it correctly and adequately.

40 East Forty-First Street.

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ABSTRACT OF DISCUSSION

DR. LEON HERMAN, Philadelphia: In a certain proportion of these cases, infections of the male internal genitalia are undoubtedly the source. However, it is very difficult in many instances, and frequently impossible, to demonstrate the primary focus of pelvic suppuration in the male, even at operation. I was especially interested in the case reports of vesico-intestinal fistula, the nontuberculous and nonneoplastic types of which would seem to be excessively rare, except as complications of diverticulitis of the intestinal tract, appendical abscesses, and other primary intestinal suppurations. Extraperitoneal retrovesical suppuration, whatever its source, may early find entrance into the rectum, but rarely into the bladder. Infections primarily situated in this region are more prone to spread by contiguity than to open into the bowel or bladder, whereas suppuration near the prostate or seminal vesicles, especially the former, becomes adherent to the rectal wall as the pus approaches the surface of the gland, and, having been walled off from the surrounding structures, finds its easiest exit into the rectum. There are exceptions to this rule, but I must take issue with Dr. Morrissey in his contention that genital infections are the common source of the ordinary types of acute ischiorectal abscesses. To accept this dictum it is necessary to presuppose retrograde extension of the infection along lymphatic channels, or blood vascular-borne infection, or extension by contiguity in the entire absence of demonstrable changes in the tissues above the anal fascia. The rectal discharge of retrovesical abscesses usually results in clinical cure, but not always. In the exceptional group, the drainage is inadequate and is characterized by recurrent attacks of purulent reaccumulations leading to marked clinical symptoms of infection. In the secondary group, notwithstanding the opening of the abscesses into the bowel, extension downward along the rectum occurs with the development of true ischiorectal abscesses. I was also interested in Dr. Morrissey's observation that genital infections may be the source of perirenal abscesses. In one of our cases of uncomplicated benign hypertrophy of the prostate, the wearing of an indwelling catheter was followed, after a week, by the development of low grade sepsis which eventually proved to be due to an enormous abscess which was situated, for the most part, around the lower pole of the kidney. Operation revealed that the abscess cavity extended from the kidney into the true pelvis and was due, apparently, to periureteral extension of the pus from below upward and not by way of the lymphatics. Dr. Morrissey has not mentioned postoperative retroperitoneal pelvic suppurations, which, among other urinary tract operations, are likely to follow ureterolithotomy for stone situated low in the ureter. This type of suppuration spreads widely in the loose retroperitoneal tissue, crossing the midline and dissecting the rectum forward until the entire area is involved. It shows little tendency to rupture into the intestinal tract and offers a most difficult problem in the provision of adequate drainage. Dr. Morrissey has simplified the usual description of the intricate fascial planes along which suppuration in the pelvis extends.

DR. JEROME M. LYNCH, New York: It is only natural in specialties so closely allied, both developmentally and locally, and concerned with regions having practically the same nerve supply, that many patients with a primary focus in the genitourinary tract and with symptoms simulating rectal trouble should be referred to the proctologist, and vice versa. Some time ago, I pointed out the possibility of rectal lesions being responsible for trigonitis. It is quite in keeping, therefore, for Dr. Morrissey to bring before us the possibility of rectal lesions having their origin in the urinary tract. I think I drew Dr. Morrissey's attention to the fact that fistulas with an anterior opening not infrequently followed vesiculectomy. These fistulas were not the result of the operation per se, but of an imperfect conception of the after-treatment. There is no question that many superior and posterior pelvirectal abscesses have their origin in the urinary tract; but rarely would a perirectal or ischiorectal abscess have the same origin. Since it is an axiom that everything travels in the line of least resistance, it would be unique for an abscess originating in the superior or posterior perirectal spaces to burrow through pelvic fascia, in preference to pushing the peritoneum before it. In either event, the abscess would be more likely to perforate the rectum or open in the groin rather than around the anus. However, there is some possibility of the situation mentioned by Dr. Morrissey arising.

DR. HERMAN L. KRETSCHMER, Chicago: I should like to have Dr. Lynch's opinion as to why men have ischiorectal abscesses more frequently than women.

DR. LYNCH: I do not know the reason for this, except that it may be that women are not subjected to the same type of injury that men are, and they do not have a prostate.

DR. BRANSFORD LEWIS, St. Louis: I have no desire to enter into any disputation that seems impending but wish merely to mention a case bearing on the subject under discussion, and showing the dangers that may accrue to the surgeon as well as the patient, in such cases. About a month ago, a patient was brought to our hospital by his two sons, who were physicians. They were tremendously incensed with the urologists and surgeons, although very competent, who had handled the case in another hospital. The symptoms had been those of ureteral colic with intense pain. The urologist in charge attempted to release the stones by opening the ureteral meatus with a cystoscope. The patient did not

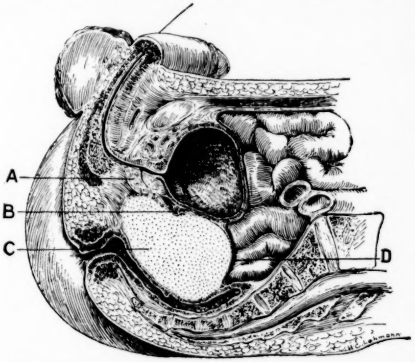

Fig. 7.—Location and approximate size of a large prostatic abscess which developed into a superior pelvorectal abscess, later breaking through the levator ani muscle and communicating with the ischiorectal fossa. Incision and drainage resulted in a good recovery. *A*, prostate; *B*, seminal vesicle; *C*, abscess; *D*, retrovesical peritoneum.

improve following this procedure; the urine became very foul, and he became seriously ill. He was removed to our hospital and we were asked to take charge of him. We early recognized that there was a fistula leading from the bowel into the bladder, the opening lying at the ureteral orifice and discharging fecal material. Members of the family asserted that the surgeon had opened up a fistula which had not existed previously. I did not believe that because of the competence of the surgeon. Drainage was carried on for several days through an indwelling urethral catheter, with repeated irrigations. We then advised that a suprapubic operation be done preliminary to any further measures that we might conclude were necessary. We set a day about two days ahead, so that we could get the patient ready for the suprapubic operation. This was interfered with somewhat by the fact that the patient died on the morning that we intended to operate. The situation looked pretty bad for the other surgeons and I insisted on an autopsy, which proved to be very fortunate, as it enabled us for the first time to demonstrate that the fistula was the result of a carcinoma which had originated in the bowel behind the bladder, adhered to the latter, broken down and penetrated the bladder wall. This did not show at all on cystoscopy, but nevertheless it had occurred and had led to the death of the patient. The lesson is that we should fortify ourselves with an autopsy in

all such cases. I have no doubt that trouble was being framed up by the family for the surgeons in this case, but we have the postmortem explanation beyond cavil confirmed by the pathologist, and nothing can be done along that line.

DR. DANIEL N. EISENDRATH, Chicago: Dr. Wesson has pointed out that Colles' fascia is attached to the triangular ligament. He has disturbed our former conception of the ligaments by saying that there is not a separate posterior portion through which the urethra passes, as we have been accustomed to teach. This Colles fascia will take care of all infections in front of the prostatic urethra. Conditions in front will gravitate down toward the ischiorectal fascia, and I think that in many cases operations are being performed by the general surgeons under the diagnosis of ischiorectal abscess when the condition is really of prostatic or seminal vesicle origin. I have had a case very similar to the one reported by Dr. Morrissey and referred to by Dr. Herman. We thought that the patient had a complicating nephritis when in reality a large perinephritic abscess was present. In the army many patients were sent in with perforations of the rectum and vesicorectal abscesses due to too vigorous massage of the prostate following gonorrhea. These cases gave us much trouble, and some of the patients remained in the ward for a year before we got the condition under control.

DR. RALPH W. JACKSON, Fall River, Mass.: Those of us who have been doing nothing but proctologic work for years see many cases in which there cannot be any possible trace of a urinary source. As Dr. Lynch has said, a true ischiorectal abscess is rather rare. The hospital intern, 90 per cent of the average practitioners and nearly that many average surgeons will call every abscess around the anus ischiorectal, but as a matter of fact most of those are infections which have come from the anal canal through the posterior commissure and have spread laterally from one side or the other. Some come from infected hemorrhoids, and by neglect and the much to be deprecated practice of poulticing, which is done by many surgeons, they spread by continuity and produce an ischiorectal abscess, either one-sided or bilateral, as a result. As a matter of fact, the large percentage of these abscesses which form after whatever condition may have been present originally encroach under the ampullar wall, and in our experience simple drainage from the outside is inadequate for cure. We never get rid of them until drainage is instituted through the ampullar wall, even though there is no evidence of them. Another thing to remember is the retrograde infection from the renal region to the rectum. I have recently operated for rectal prolapse in a patient who was operated on fifteen years ago. That first operation was futile. The infection spread, probably by direct continuity, into the prostate, and a very large prostatic abscess developed which required considerable treatment. Finally we were able to effect a cure. One thing which proctologists encounter more often than anything else is anal and lower rectal abscess from too vigorous prostatic massage. I have had several of these cases, the infection entering through a perforation in the anus, and the result has been some very severe perianal processes that have been very difficult to handle.

DR. JOHN H. CUNNINGHAM, Boston: For a long time I have been interested in what Dr. Morrissey has been talking about. I have the feeling that the discussion so far has centered chiefly about the nomenclature and has led us astray from the fundamental principle which is the basis of this communication. I am convinced that suppuration may occur in the ischiorectal fossa from infection in the deep genital structures, and suppuration may give the clinical picture of an ischiorectal abscess, which in fact it is, differing only in etiology. I am further convinced that such suppuration may occasionally rupture into the bladder and that it may also produce a perirenal abscess. In other words, I agree in toto with the three fundamental premises that make up Dr. Morrissey's paper; namely, that suppuration originating in the prostate and seminal vesicles may produce an abscess in the ischiorectal fossa; that this suppuration may rupture into the bladder, and that such suppuration may produce a perirenal abscess. That these conditions which he has described are common, I do not believe. I am of the opinion that if we look carefully into the history of patients with ischiorectal abscess, it will be found that there has been infection, chronic or acute, in the deep genital structures in many cases, and without a history of rectal symptoms which can be considered as an etiologic factor. In many patients with ischiorectal abscesses on whom we have operated, there has been a history of a chronic prostatitis and seminal vesiculitis, and they may have a urethral discharge of varying degree. I believe that the cases of suppuration of ischiorectal infection which penetrate the bladder are rare, and my experience with this group of cases leads me to agree with Dr. Morrissey that it is very difficult to demonstrate the fistula from the bladder side by cystoscopy. His pictures showing the result of the barium enema in establishing the presence of a bladder fistula are interesting from a diagnostic standpoint. As a diagnostic measure, it may or may not be better than the usually employed method of using colored solutions for the same purpose. His operative procedure is the only one that has any sense whatever. The exposure must be large. In some of our patients with a persistent suppurative sinus tract, I have found at operation that the tract originates in a diseased seminal vesicle. At operation, besides removing the sinus tract, we have removed the infected seminal vesicle which I believe essential, in some instances, to produce healing. Microscopic examination of such vesicles removed has shown them to be in varying degrees of inflammation and not tuberculous. I am inclined to differ with some of the speakers, who do not believe that ischiorectal abscesses ever develop from infection in the deep genital structures. I do agree, however, that the relative percentage is small. The fact that the proctologists who have spoken today are unable to offer any explanation as to the rarity of ischiorectal abscesses in the female should, I believe, be taken as further evidence that the deep genital structures may be the site of origin.

DR. JOHN H. MORRISSEY, New York: I am somewhat disconcerted by the remarks of the proctologists and with all the details regarding the nature of these abscesses. I began this study principally with perirectal and perirenal abscesses in mind, and was led into the question of ischiorectal abscesses as the subject developed. It would seem to me that the reports from Bellevue Hospital, New York Hospital and the Woman's Hospital speak for themselves in that 90 per cent of these cases occur in men. Why this proportion obtains I do not know. As far as that is concerned, it strikes me as a most desirable field for research on the part of proctologists and I trust that this paper will stimulate them into giving us more information on the subject. Certainly, their textbooks are most scant in this particular. As regards the superior pelvirectal abscesses, I did not say that they were common. I have seen only ten cases myself, and these were from St. Bartholomew's Hospital. Dr. Lynch has a record of only forty-two cases extending over many years of experience. I do not think, however, that we are overlooking here a hidden field of suppuration which may often escape attention, and that it is a suppuration analogous to the pelvic infection in the female due to the pelvic viscera in the males in exactly the same way as it arises from the pelvic viscera in the female.

Value of Physiology in Diagnosis.—Physiology is rightly called the Institute of Medicine because it gives precisely what the medical man requires for making a diagnosis. He must know how to investigate the action of each part of the body in order that he may determine whether its action is or is not normal and healthy. He must know what is the normal action of each part of the body; otherwise how can he say that it is abnormal? And this knowledge must be real and practical, not acquired merely from books and lectures, otherwise it is useless. How will reading or hearing a lecture about the sounds of the healthy heart enable him to say whether the sounds he hears in the chest of his patient are normal? How can the fullest description of the pulse enable him to decide whether the pulse he is called on to examine is normal?—Paton, D. N.: *Edinburgh M. J.* **35**:4 (Jan.) 1928.

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Clinical Notes, Suggestions and New Instruments

APPARATUS FOR SUPPORT OF LEG IN WHITMAN OPERATION

ARMITAGE WHITMAN, M.D., NEW YORK

It has long been the practice at the Hospital for Ruptured and Crippled to do the Whitman operation—astragalectomy and backward displacement of the foot—as well as many others, with the limb made bloodless by the use of an Esmarch bandage. Following the operation the limb was suspended above the bed to obviate as much as possible the danger of swelling following the return of blood to the limb. In theory the suspension was continuous from the moment of application of the plaster. An intern or orderly returned to the ward with the patient on the stretcher holding the limb elevated, and continued so to hold it until it had been secured in suspension by tapes strung from the head to the foot of the bed.

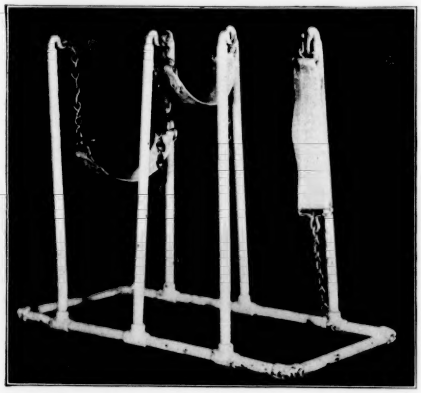

Fig. 1.—Suspension apparatus: By means of the chains and the hooks, the height of the suspension may be varied.

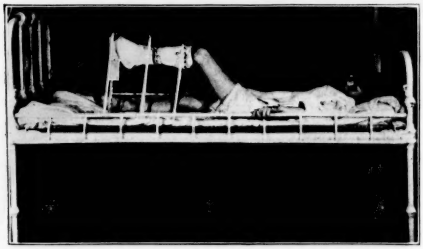

Fig. 2.—Apparatus holding the limb suspended when the patient is returned to bed.

In practice it was found that frequent breaks occurred in this technic, and that in almost every case in which swelling occurred to a noticeable degree it would be found on inquiry that at some time or other the suspension had been interrupted or discontinued.

The apparatus illustrated was therefore devised. The straps may be adjusted by means of the hooks and chains to any convenient height. The limb is placed in suspension on the operating table and the apparatus is moved with the patient from the table to the stretcher and from the stretcher to the bed, where it remains until the permanent suspension is installed.

Fig. 3.—Permanent suspension applied in bed.

The apparatus was devised in 1920 and since then has been in constant and increasing use at the Hospital for Ruptured and Crippled. It would seem, therefore, at this time that it might be reported as a legitimately tested surgical convenience.

71 Park Avenue.

CASE OF DOUBLE ANUS, VAGINA AND UTERUS

WILLIAM A. HINCKLE, M.D., PEORIA, ILL.

While congenital malformations of the pelvic organs are by no means a rarity, the case here reported is, I believe, extremely unusual.

A woman, aged 62, had enjoyed normal health until recently. She was referred to me for certain rather indefinite bowel and rectal symptoms. After much persuasion I was permitted to make an examination which she had previously denied to others. Her reason for objecting was soon apparent.

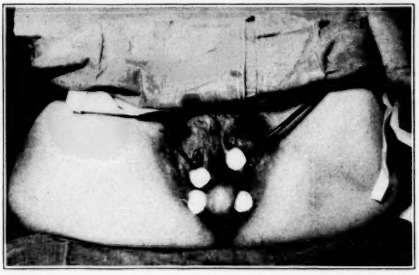

Fig. 1.—The two catheters in the urethras. The white objects are pieces of gauze wrapped round the ends of rectal tubes and inserted into the rectums and vaginas.

Externally I found two well developed anuses about three inches apart. Each had a well defined sphincter muscle over which the patient had fair control. There were two vaginas and two well developed clitorides. The labia majora on the outer sides were normal. The two on the inner aspects were fused into a sort of central perineal body.

The organs on the left were better developed than those on the right. Defecation was usually through the left anus, though, when the movements were loose, it took place through both and not always at the same time. Urination was from both urethras and nearly always simultaneous.

Before the climacteric, the patient menstruated from both vaginas, though more freely from the left. Bimanual examination disclosed an apparently normal uterus on the left. The

right vagina was so small that it would admit a finger only with difficulty. However, a cervix was plainly discernible. The patient, who was married, said she always had intercourse in the left vagina. She insisted that she was normal sexually.

Proctoscopic examination did not show any connection between the two rectums. A solution of methylene blue injected into one rectum or bladder did not appear in the other.

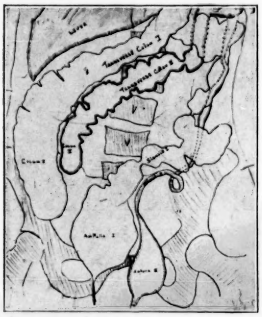

Fig. 2—The two rectums and colons retouched to bring out more clearly the anatomy as shown by the fluoroscope.

Owing to weak sphincteric control and disinclination on the part of the patient, roentgenograms were not very distinct. However, they showed two separate colons up to the cecum. Fluoroscopic examination confirmed this. The roentgenogram was retouched by the radiographer, Dr. Lowel Goin, to bring out more clearly these facts.

Cystoscopic examination by Dr. Adelsberger, a competent urologist, did not show any connection between the bladders, and there was but one ureteral opening in each.

In addition to the other "twos" so conspicuous in this case, the patient had had two husbands, was once pregnant, and had a miscarriage of twins between the second and third month.

630 Jefferson Building.

THE HANDITOME: A SIMPLE DEVICE FOR CUTTING SECTIONS *

HAMILTON COOKE, M.D., ROCHESTER, MINN.
Fellow in Surgery

To facilitate the cutting of sections without the use of a microtome, I have devised a simple instrument which is called a handitome. In principle the handitome is a clamp 11 cm. long and 2.5 cm. high, except 2 cm. from the jaw where the height is 1 cm. The clamp is held together by a screw and a spring which are placed 5 cm. from the tip of the jaw. The

Fig. 1.—Handitome, blade and cork mat.

distal 0.5 cm. of the left jaw and 1 cm. of the right jaw are bent so that, when the clamp is open 0.5 cm., the right and left bend are in line and form a right angle with the straight arms (fig. 1). The essential requirements which must be observed in the construction of the handitome are that the angles must be sharp and the lateral flares be on a straight line when the jaws are 0.5 cm. apart. After the use of a razor and several kinds of razor blades, the Durham duplex blade was found to be most satisfactory. This blade, which is inexpensive, is thin and long, and has two cutting edges.

In the cutting of sections, a block of tissue, about 0.5 cm. in cross section, is placed on a cork mat 10 by 15 cm., and grasped between the jaws of the handitome. The blade is held, by as small a portion as possible, between the left thumb and the index finger (fig. 2). A rapid cut is made with the distal edge of the blade in the cork mat and the surface

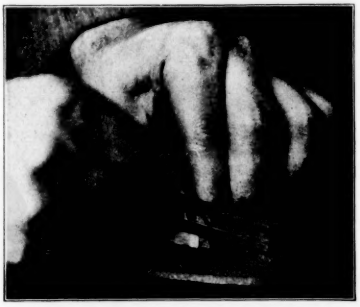

Fig. 2.—Knife in position to cut a section.

against the lateral flares of the handitome. The cut should be made in a straight line with slight downward pressure; a sawing motion should not be used (fig. 3). After the first cut, which straightens the block, pressure is exerted on the jaws of the handitome by the fingers. This pressure forces the block forward. When the block protrudes sufficiently to make a section of the desired thickness, another cut is made and the section is finished. After the block is squared, several sections can be made by increasing the pressure on the jaws without moving the position of the block. The thickness of the sections depends on the consistency of the tissue and whether it is fresh or fixed. Fresh tissue, with the exception

Fig. 3.—Section finished.

of cellular and soft structures, can be cut as thin as 100 microns, which is about the optimal thickness. Tissue fixed in solution of formaldehyde (10 per cent) for several hours or soft tissues hardened by fixation in boiling solution of formaldehyde can be cut as thin as 40 to 60 microns. To obtain thinner sections, a little practice is necessary in making a rapid cut with the correct pressure. Terry's [1] modifica-

* From the Mayo Foundation.
* Work done in Section on Surgical Pathology, Mayo Clinic.

1. Terry, B. T.: A Rapid Method of Examining Tissue Microscopically for Malignancy: Preparation of Polychrome Methylene Blue, J. Path. & Bacteriol. **30**: 573-575, 1927.

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tion of polychrome methylene blue and his technic of staining were used, and found to be satisfactory. In brief, the technic consists of four steps: (1) a small drop of stain on the slide; (2) section of tissue grasped by a pair of small forceps and one side of the section dipped in the stain for three seconds; (3) section rinsed in tap water, and (4) section placed on the slide with the stained surface up and a cover glass applied.

Unna's polychrome methylene blue (Gruebler) was also satisfactory, but 2 per cent thionin in 5 per cent acetic acid cannot be recommended. Permanent sections of fixed tissue stained with hematoxylin and eosin have been made from sections 40 to 60 microns thick. The appearance of the cells in these sections is good but not of sufficient detail for comparison with sections made by a microtome. Artificial light is recommended, especially when the oil immersion lens is used.

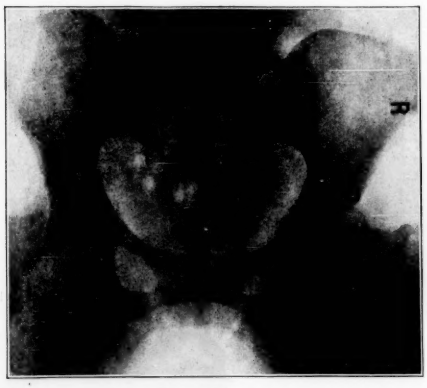
CONCLUSION

The handitome, a simple inexpensive instrument, furnishes an easy method of cutting sections of fresh or fixed tissue. These sections can be stained satisfactorily by Unna's polychrome methylene blue (Gruebler) or polychrome methylene blue as modified by Terry.

CHRONIC IRRITATION AS A CAUSE OF CANCER

FREDERICK G. DYAS, M.D., CHICAGO

A woman, aged 36, who presented herself for examination in 1926, had had a metal pessary introduced into the uterus seven years previously. This had been allowed to remain constantly for seven years. She sought medical advice because of a profuse, purulent, foul-smelling vaginal discharge. Nothing could be seen or felt on examination, but the roentgen ray revealed a shadow corresponding in size and shape to the patient's description of the pessary. Under gas anesthesia the anterior lip of the cervix was split and with considerable difficulty the metal pessary, which was deeply embedded in the wall of the uterus, was removed. The patient was instructed to come back for observation but



Shadow of pessary.

failed to do so for a period of a year. During this time there had been a slight diminution of the vaginal discharge. On examination at the end of the year a typical carcinoma of the cervix was noted. Sections of tissue removed and subjected to microscopic examination confirmed the diagnosis of carcinoma. The uterus was large and boggy. Fifty milligrams of radium was introduced into the uterus and allowed to remain for twenty-four hours; after two weeks there was some betterment of the discharge and shrinking of the uterus, and a total hysterectomy was performed.

The history of this case illustrates the danger of the rather prevalent practice of introducing these substances into the uterus as a means of contraception. They usually produce the desired result, but the case reported is proof that the method is too dangerous to be continued.

25 East Washington Street.

SPONTANEOUS FRACTURE OF THE POSTERIOR CLINOIDS

ROBERT L. PITFIELD, M.D., PHILADELPHIA

Fracture of the clinoids has been observed by several physicians but is a rare occurrence. The case here reported is of interest because of the excellent demonstration of the lesion

Small sella turcica with broken posterior clinoids and some depression of the anterior processes. Line of fracture faintly visible.

by means of the roentgen ray and because of the typical history.

W. B., a young Irish-American, who had for years exhibited signs of constitutional inferiority, having a small, meager frame, long, slender hands and feet, high arched palate, adherent ear lobes and small irregular skull, was in many ways abnormal mentally, in that he was intractable and would not submit to much medical supervision and care. He was admitted to the hospital because of excruciating bitemporal headaches. These were so severe that he was unable to work. During a more than severe encephalalgia he was suddenly relieved of all pain. A roentgenogram the following day revealed a small sella turcica and fracture of the posterior clinoid processes of the sella. The broken and dislodged fragment is clearly shown in the accompanying illustration.

As it was not possible to hold the man in the hospital after his headache ceased no metabolic studies could be made.

In many ways he exhibited many of the signs of Timme's syndrome; he certainly displayed a polyglandular dysfunction. It is supposed, and justly, that the pituitary swells inordinately at times, the confinement by the sella and the clinoids hinder the enlargement, and pain ensues. It was not possible to tell why the patient's pituitary should enlarge at times. Possibly it was due to extra stress laid on it. In women it is not uncommon to find this type of headache during the menstrual periods, when the gland is called on for extra work, and hence the engorgement. This is true of the thyroid. Pituitary feeding greatly relieves this type of headache in many patients, and it is worth trying in every case in which there is a bitemporal pain, especially if there is any hemianopia. The latter is caused by the encroachment of the swollen gland on the optic chiasm.

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A SIMPLIFIED METHOD OF EXAMINING THE PATENCY OF THE FALLOPIAN TUBES

I. SETH HIRSCH, M.D., D.M.R.E. (CANTAB)., NEW YORK

Until now the methods for the determination of the patency of the fallopian tubes have utilized the injection of gas and such contrast mediums as iodized oil, bismuth or barium emulsions. In all these methods the exhibition of more or less pressure or force is necessary to send the air or contrast substance through. Even in the method of Williams and Reynolds which Dr. A. J. Rongy and I have tried out, no matter how carefully the emulsion is introduced into the uterine cavity it is practically impossible to avoid producing a positive intra-uterine and intratubal pressure. It seemed important to have a method in which only the natural motive forces operative in the uterotubal canal should carry the contrast medium through the fallopian tubes. To this end I devised a medium which seems to serve the purpose.

Barium sulphate is rubbed up with just enough petrolatum and oil of theobroma to render it pliable. The mass is then pressed by means of a mold into the form of bougies and cut into pieces 3 cm. long and 2 mm. thick. The barium content is about 75 per cent. At the body temperature the bougie melts and the barium then exists in a suspension of

Fig. 1.—Twenty minutes after insertion of the bougie: The uterine cavity is incompletely outlined; a trace of the contrast substance is already visible in the left tube.

petrolatum and oil of theobroma. The bougies are preserved in a mixture of powdered lycopodium and iodoform or thymol iodide.

The instruments employed are sterile and cold when in use. No anesthesia is necessary. With the vaginal speculum in place, the vagina and cervix are painted with iodine. A sound is introduced into the uterus to determine its position. Then the depositor[1] with its plunger in place is introduced into the cervix not necessarily beyond the internal os. Cervix forceps may be utilized to facilitate the entrance of the depositor. In parous women the instrument passes readily. In nulliparous women the external os may be slightly dilated with a pair of dressing forceps. The tube with its smooth rounded end will then pass into the cervix readily. The plunger is now removed and the barium bougie is inserted into the proximal end of the depositor. When the plunger is reinserted, the barium bougie will be deposited within the cervix. This bougie melts almost immediately on being placed in situ. The depositor is then removed and the pelvis is roentgenographed stereoscopically.

The uterus is always clearly outlined not as a dense shadow but as a linear triangular shadow branching at a point corresponding to the fundus. The proximal portion of the tube shows as a simple, fine line corresponding to the isthmus and a heavier linear shadow corresponding to the ampulla and thickenings or beadings depending on the extent of tubal peristalsis. Examination eighty minutes after insertion may show the contrast substance outlining the tubes; one hour later the granules may be at the fimbriated end of

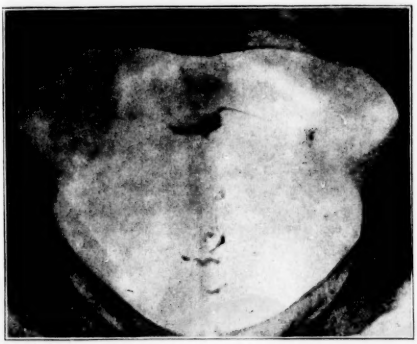

Fig. 2.—One hour and twenty minutes after insertion: Both tubes are definitely outlined.

the tube or in the peritoneal cavity. Several days later the shadows of the barium can no longer be visualized.

The rapidity with which the contrast substance is carried to the tubes makes it highly improbable that its movement is due to action of the ciliated epithelium of the uterine mucosa. It is probable that a uterine contraction brings the contrast substance to the tube and tubal peristalsis carries it to the fimbria and out, although experiments on animals have shown that particles of contrast substance do not find their way into the fallopian tubes unless there is a free communication between

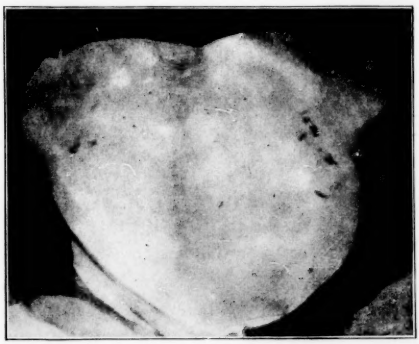

Fig. 3.—Two hours and twenty minutes after insertion: The contrast granules are in the fimbriated ends of the tube and in the peritoneal cavity.

the tube and the peritoneal cavity suggesting that a purely mechanical factor such as aspiration may be at play in the mechanism. This method may be practiced without the slightest inconvenience to the patient, and in the twelve patients whom Dr. Ned Shnayerson[2] has tested there have been no noticeable after-effects.

1. This instrument is a nickel-plated tube of 4 mm. caliber. It is curved on its distal end to accommodate the curve of the cervico-uterine angle. A plunger attached to a flexible wire fits into the tube.

2. From the Gynecological Service of Dr. L. G. Ladin, Beth Israel Hospital.

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FAMILIAL MONGOLIAN IDIOCY

MAXWELL P. BOROVSKY, M.D., CHICAGO

The occurrence of multiple cases of mongolian idiocy in one family is so unusual that I consider this report warranted. Orel[1] reviewed the literature up to 1926 and found the report of nineteen cases of familial mongolism and thirty-four cases of mongolism in twins. He points out that frequently members of a family in which there is a case of mongolian idiocy will show mongolian stigmas, which he designates as potential or latent mongoloidism. These abnormalities may consist merely of a flat bridge nose, incurvation or shortening of the little finger, or a tendency toward Mongolian slit eyes. He also calls attention to the fact that in mongolism in twins, if they are both of the same sex, one or both may be mongols, while in twins of opposite sex only one is so affected.

Included in Orel's survey are the reports by Glassburg,[2] Pogorschelsky[3] and Chatzen,[4] who write on familial mongolism, in each instance two members of a family being so affected. Pogorschelsky's cases occurred in cousins. Subsequent to Orel's review there appeared articles by Dietrich and Berkley,[5] Reuben and Klein,[6] Mitchell and Downing,[7] and Dickey,[8] in which cases of mongolian idiocy in twins are reported.

The foregoing constitutes, as far as I know, the bulk of the literature on this subject. None of the mysteries relative to the etiology of this condition have been solved by a study of these cases, nor has the question been answered as to whether the causative factors are exogenous or endogenous. The evidence seems to point toward some intrinsic endogenous variation from the normal, for coincidence will not satisfactorily explain them.

In my review of the literature I did not discover any report of more than two cases of mongolian idiocy in any one family. I record here the birth of two mongolian idiots to one woman and the birth of another to her sister. It is reasonable to assume that in this instance there is some familial maldevelopment of the ovum to account for the multiplicity of cases in the offspring of these sisters. All three of my cases occurred in girls, with intervening normal boys.

In the first family the father is 34 and the mother 29; neither was married previously; both are healthy and do not show endocrine or nervous disorders. There were four children born of this union in the following order:

1. J. G., a normal boy, now 5 years 8 months old.
2. G. G., a girl, seen at 6 weeks of age, a typical mongol; died of bronchopneumonia at 13 months.
3. R. G., a normal boy, now 2 years 6 months old.
4. B. G., a girl, seen at 2 weeks of age, a typical mongol, now 13 months old.

In the second family the father is 44 and the mother 40 years old, a sister of Mrs. G. Both are healthy and do not show endocrine or nervous disorders. The father in this case had been married previously and has five normal children by his first wife.

1. D. O., a normal girl, now 3 years old.
2. M. O., a girl, seen at 9½ months of age, is a typical mongolian idiot.

All of these cases have come under my own observation in private practice and are unquestionably cases of mongolian idiocy.

SUMMARY

1. Multiple cases of mongolism in one family are relatively rare.
2. Three female mongols were observed as the offspring of two sisters.
3. In one of these families the father had been married previously and had five normal children by his first wife.
4. This observation speaks for a familial endogenous maldevelopment as the etiologic factor in this obscure condition.

310 South Michigan Avenue.

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4. Chatzen: Familial Mongolism, Monatschr. f. Kinderh. **30:** 120 (May) 1925.
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6. Reuben and Klein: Mongolism in Twins, Arch. Pediat. **43:** 552-554 (Aug.) 1926.
7. Mitchell and Downing: Mongolian Idiocy in Twins, Am. J. M. Sc. **172:** 866-872 (Dec.) 1926.
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Special Article

FOOD POISONING

EPIDEMIOLOGIC ANALYSIS OF FOUR HUNDRED AND TWENTY-FIVE OUTBREAKS IN THE UNITED STATES DURING 1923, 1924 AND 1925 *

Reliable facts concerning the prevalence of food poisoning in the United States are difficult to obtain since the disease is rarely made reportable. Food poisoning is a reportable disease in nine states: Georgia, Kansas, Maryland, Montana, New Mexico, Oklahoma, Washington, Wyoming and West Virginia. Botulism is now a reportable disease in thirteen states: Colorado, Connecticut, Arizona, Idaho, Kansas, Maryland, New York, Minnesota, Oregon, Washington, California, West Virginia and Wyoming. In addition, ordinances of cities like Chicago require this disease to be reported.

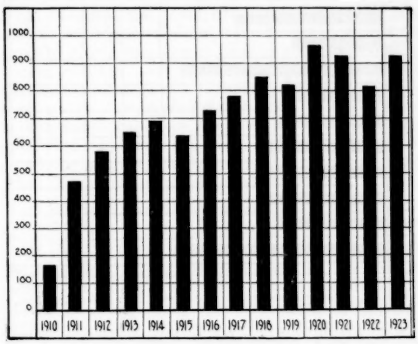

Chart 1.—Mortality from food poisoning, 1910-1923.

This epidemiologic study of 425 selected outbreaks includes data gained from field investigations, from records of various health departments, from daily files of newspapers, and from the records of the National Canners' Association.

Since 1910 and including 1923 there have been reported in the United States Census Bureau 9,981 deaths attributed to poisoning by food. In 1910 there were reported 157 deaths, while in 1920 there were 957, a rate of 10.9 per million; in 1921, 927, a rate of 10.5; in 1922, 810, a rate of 8.7, and in 1923, 928, a rate of 9.6 (chart 1).

In 1923, Geiger[1] reported 749 outbreaks in the United States, involving 5,210 persons with 399 deaths between 1910 and 1922, inclusive, with a percentage case mortality of 7.5. Additional data are available of

* Data for 1926 and 1927 are being prepared.

1. Geiger, J. C.: Poisoning by Food Probably Due to Contamination with Certain Bacteria, J. A. M. A. **81:** 1275 (Oct. 13) 1923.

425 outbreaks for 1923, 1924 and 1925, inclusive, involving 1,902 cases with 145 deaths, a percentage case mortality of approximately 7.6.

To summarize, data are available for the periods 1910 to 1925, inclusive; 1,174 outbreaks, involving 7,112 cases with 544 deaths, a percentage case mortality of approximately 7.6. If this percentage case mortality is accurate, then there have been approximately 12,500 cases of food poisoning in 1920, and approximately 133,450 cases for the period from 1910 to 1923, inclusive. However, it will be shown later that the percentage case mortality of the data can be materially reduced when the results of necropsies are analyzed and the outbreaks due to botulinus intoxications separated.

For instance, in the records of 1,174 reported outbreaks under consideration, there are reports of sixty-six outbreaks of botulism, with 253 persons made ill. Of this number, 197 died, a percentage case mortality of 77. If this group of cases is separated from those of general food poisoning, there should be of the latter in this series a percentage case mortality of approximately 5.0 instead of 7.6. In this connection, it may be well to state here that outbreaks of botulism, though always rare, have steadily decreased.

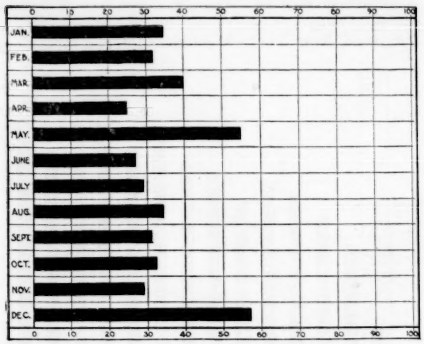

Chart 2.—Seasonal distribution of outbreaks by months, 1923-1926.

In addition, there are records of eighty-seven necropsies at which the previous cause of death has been given usually as "ptomain poisoning," which diagnosis had to be subsequently changed. Likewise, there can be included data regarding thirty-five instances with forty-six deaths of metallic poisoning, due, as the evidence indicates, to murder, suicide or accidental causes, and twenty-three instances of acute alcoholism with seventy-nine cases and eight deaths. If these erroneously recorded deaths (141) are eliminated from the number previously given as having been due to food poisoning, there is a further reduction of the percentage case mortality from 5.0 to approximately 2.9.

From experience in investigations, this case mortality rate in general food poisoning is obviously too high. This opinion is further substantiated by the results shown of the comparatively few necropsies performed, which indicate that food poisoning or "ptomain poisoning" is given not infrequently in error as a cause of death. It is of particular interest to note the inclusion of cases and deaths of acute alcoholism as those of food poisoning.

A careful search of the records was made, and only those outbreaks were considered in which either the epidemiologic or the laboratory evidence was fairly conclusive that the paratyphoid group was the contaminating organism of the causative food poison. Of these, in the 1,174 outbreaks studied, there are 120 outbreaks involving 3,299 persons with fifteen deaths, a percentage case mortality of 0.4. Therefore, this case fatality rate (0.4) in this selected series is representative of general food poisoning rather than the rate 2.9.

During the period under discussion, 1923, 1924 and 1925, there were also reported in the medical literature a number of outbreaks, exclusive of botulism, twenty-two of which the laboratory data obtained regarded as conclusive. These outbreaks involved 3,837 persons and caused ten deaths.[2]

EPIDEMIOLOGIC ANALYSIS OF DATA

During the periods 1910-1922, inclusive (thirteen years), 749 investigations were made.[1] In 1923, 1924 and 1925, inclusive, 425 investigations of outbreaks of alleged food poisoning heretofore unreported in the medical literature, with perhaps the exception of outbreaks of botulism, are recorded in this study.

TABLE 1.—*Geographic Distribution of Outbreaks, 1923, 1924 and 1925*

East	Middle West	South	West
New York...120	Illinois 16	Missouri 18	California ... 16
Pennsylvania. 30	Ohio 25	Texas 9	(9 botulism)
Massachusetts 44	Minnesota ... 9	Kentucky ... 5	Washington.. 17
New Jersey.. 12	Indiana 4	Washington,	(4 botulism)
	Iowa 5	D. C..... 5	Colorado 5
	Wisconsin ... 11	Tennessee ... 5	(3 botulism)
	Michigan 11		Oregon 6
			(1 botulism)
			Wyoming ... 6
			(4 botulism)

SEASONAL DISTRIBUTION

A study of chart 2 indicates that there is no striking seasonal prevalence. In fact, an average of thirty-nine outbreaks was reported in the winter months and thirty-seven in the summer. It has been thought that the temperature of the summer months plays a definite part in food poisoning by increasing the number of the contaminating bacteria, yet it is probable that this occurs as frequently in the preparation and cooking of the food.

GEOGRAPHIC DISTRIBUTION

To ascertain whether there was any definite concentration as to geographic areas, the divisions shown in table 1 were arbitrarily selected. Only those states in

2. The reports of these are as follows:
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Burgess, W. L.: Proc. Roy. Soc. Med. (Section of Epidemiology and State Medicine) **18:** 61 (Aug.) 1925.
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Wichels, Paul; and Barner, Wiegand: Med. Klin. **21:** 1880 (Dec.) 1925.

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which five or more outbreaks had occurred were considered. A study of table 1 apparently indicates that there is a concentration of outbreaks that is not altogether explained by density of population. In certain cities, such as New York, Brooklyn, Boston, Pittsburgh, Chicago and Cleveland, but particularly New York, Brooklyn, Boston and Cleveland, numerous outbreaks are reported which in turn affect the pro rata of the states in which they are situated. When, however, the population of the group of states mentioned is taken into consideration, and the reported outbreaks accredited to each group, there is approximately a ratio of one outbreak reported to every 137,900 inhabitants in the Eastern group; one to 355,800 in the Middle West group; one to 337,300 in the Southern group, and one to every 156,440 in the Western group.

Outbreaks have been reported from forty-three states. Comparatively, the ratio of outbreaks from the East to the Middle West is 3.5 to 1, and from the East to the South and West 4.9 and 4 to 1, respectively. It is exceedingly interesting to note that, of the outbreaks occurring in California, Colorado and Wyoming, more than one half, and in Washington, one fourth, were botulism. Of the botulism outbreaks, twenty-one occurred in Western states, and in one of these the food was preserved in the Middle West. Two outbreaks of botulism occurred in the Middle West, and in both the causative food was preserved in the West.

ALLEGED CAUSATIVE FOODS

Of the alleged causative foods, 401 were commercially preserved and seventy prepared in the home, a ratio of about 4 to 1. Table 2 indicates briefly the various types of food involved: meat products, fish, vegetables and fruit. Milk was placed in both types of food, particularly with reference to creamed sauces prepared in the home. It is desired, however, to stress that in the commercially canned products involved, such as salmon, corn, etc., the number of outbreaks may be regarded as infinitesimal when compared to the number of cans packed.

TABLE 2.—*Types of Food Involved* *

	Meat	Fish	Vegetables	Fruit	Soup	Milk
Commercially preserved..	30	115	176	62	10	8
Home prepared.....	33	1	19	2	0	15

* In a number of outbreaks, more than one food was stated to have been the causative factor.

Of the commercially prepared meat products, beef (24) heads the list; of fish, salmon (75) and sardines (21); of vegetables, tomatoes (30), corn (27), pork and beans (29), spinach (19), kraut (5) and peas (47); of fruit, peaches (20), pineapples (11) and olives (10). Of the home prepared meat products, beef (22) and sausage (4); of fish, salmon (1); of vegetables, string beans (12), corn (4) and peas (2); of fruit, plums (1) and of milk there were seven outbreaks attributed to creamed chicken, five to creamed salad sauces and three to other creamed sauces.

It will be noted that there is a tendency to incriminate commercially canned foods. Such foods have the advantage over other types of food of being relatively free from human contact, usually prepared in sanitary plants and from fresh material. But, most important, there is properly controlled sterilization based on scientifically acquired experimental data. Therefore, contamination by the paratyphoid group is unlikely in such foods, except in a "leaky" can and after opening. Likewise, the increased number of outbreaks attributed to commercially canned foods is not unlikely due to the fact that this industry has for years carefully investigated such reports and those records are being used in this study.

FAMILY GROUPS, ISOLATED CASES AND LARGE OUTBREAKS

In this study of 425 outbreaks, there are recorded 138 outbreaks, approximately 31 per cent, in family groups; 265 outbreaks, approximately 62.5 per cent, in isolated outbreaks of one or two cases, and fifteen large outbreaks, approximately 3.5 per cent. The comparatively larger number of isolated outbreaks is an indication of how difficult of solution the situation regarding food poisoning is. It is unusual for these outbreaks to be reported early enough so that they may be investigated epidemiologically and bacteriologically. Therefore, it is not unlikely that many foods are blamed for the illness when they are not at fault, and that the condition is improperly or hastily diagnosed.

AGE AND SEX DISTRIBUTION

In our assembled data, it was found impossible to make a special study of age and sex distribution. It could be stated that there were no indications of any specific sex or age incidence. We have records of fifty cases of illness classified as food or ptomain poisoning among children. Of these, there were thirty-three deaths, a percentage case mortality of about 66. With such a high case mortality rate, there is a reasonable assumption that they are due to causes other than food poisoning. This opinion seems to be fully borne out in a study of these selected cases, and will be discussed when the original diagnoses are considered.

PHYSICAL APPEARANCE OF THE ALLEGED CAUSATIVE FOOD

Of the 425 outbreaks in this study, in twenty-eight the food was regarded as spoiled or "off" in taste or odor. Of these, twenty-three were outbreaks of botulism. There were, however, eight outbreaks of botulism in which the toxic food was stated to be normal in odor and taste. The description of the food was given as "spoiled" in twenty-six instances and "off" in two. The taste was regarded as metallic in one instance.

In four instances, the canned goods used were described as swells. In three, the canned goods were said to have been left in the can for several hours. The latter alleged outbreaks were carefully gone into; in neither were the cases clinically regarded as food poisoning, and the epidemiologic evidence was far from being complete and definite. Canned foods, when allowed to remain open in the can for several hours, will not cause symptoms of food poisoning unless they are subsequently contaminated or previously toxic. There were two instances, in commercially canned peaches, in which the tin contents of two cans of the same pack were, respectively, 439 and 310 mg. per kilogram. The symptoms, however, were neither of food poisoning nor of salts of tin and the alleged causative food had nothing to do with the illness.

It was interesting to note that in our data there were eighty-six instances of canned food alleged to contain foreign articles. Of these, "glass" was said to have been present in sixteen instances. In nine of the six-

teen, however, the so-called glass was in canned salmon, which later proved to be crystals of magnesium-ammonium phosphate. Tacks or nails were said to have been present in ten; worms in five; a mouse in six; a fly in six; stone in thirteen; a screw in one; a buckle in one; wire in two; a bolt in one; a rag in five; a moth in one; a toothpick in one; a bug in six; a roach in two; a match box in two; a needle in one; a spike in one; chewing gum in one; a grasshopper in two, and a splinter in two. A careful scrutiny of these indicates that many were probably wilful attempts to secure money.

CLINICAL ANALYSIS OF DATA

It has been stated before that in the data there are 120 outbreaks suspected as being due to food contaminated with the paratyphoid group. Of the 425 outbreaks directly concerned with this study, sixty-six could be classified as being caused by the foregoing group of organisms. The majority of these are not supported by laboratory evidence. A careful search of the records shows that in the 425 outbreaks, excluding those caused by the toxin of *B. botulinus,* only fifty-five are supported by laboratory evidence. Of these, forty-two are negative. This preponderance of negative results which were recorded mainly from the examinations of the suspected food is probably due to some epidemiologic error in the determination of the causative food. Unfortunately, the food in many outbreaks has been entirely consumed at the time of the suspected meal, and the delay in investigation may be such that examination of patients' excreta would be a doubtful procedure. Moreover, from experience it could be stated that the limit of delay for investigation, at least in the examination of stools, should never be more than one week, and even then it is not likely that positive or supportive laboratory evidence will be secured, unless carriers are to be searched for or unless there is evidence of a true infection.

There are records of thirteen outbreaks in which the laboratory results have been apparently conclusive. Of these, four proved to be carbon monoxide; in four, *B. paratyphosus* B was isolated; in three, *B. dysenteriae* of Flexner or of Shiga; in one, the organism isolated was one of the paratyphoid group but never fully identified, and one proved to be trichinosis. In no instance was the suspicious food in the outbreaks listed in this group abnormal in odor, taste or texture.

ORIGINAL DIAGNOSIS

In 135 outbreaks, approximately 32 per cent of the 425 in the series, the diagnoses were given as "ptomain poisoning" by physicians. It is interesting to record that in eighty-six (approximately 20 per cent) additional outbreaks, this was likewise the diagnosis by newspapers carrying the reports of the occurrences, and seventeen, or 4 per cent, by attorneys with the intention of handling the cases in court. Clinically, the responsibility of correct diagnosis in food poisoning rests on the physician and health officials.

The records indicate the universality of usage of the term "ptomain poisoning" by both physicians and the laity. It will probably continue to be used, and whether cases are so diagnosed or not, it seems a diagnosis of convenience, and foods are blamed without proper epidemiologic, bacteriologic or toxicologic investigation. Moreover, the diagnoses have been carefully scrutinized and the outbreaks analyzed as far as the reports allowed this to be possible. The results are rather startling and were obtained by reconstructing the clinical histories in the outbreaks with the idea of determining the true diagnosis either from symptoms or from subsequent necropsies and laboratory investigations. Accordingly, in 215 outbreaks, approximately 50 per cent, the assembled data indicated conditions other than food poisoning. There were indications of appendicitis, tuberculosis, meningitis, various infectious diseases, alcoholism, carbon monoxide, metallic poisonings and pregnancy. It is true that many of the reconstructed histories with the change of diagnoses are not absolutely proved. Nevertheless, the same could be said about the diagnosis of "ptomain poisoning." The results of necropsies, which will be noted later, and the absence of supportive laboratory data in many outbreaks, are more than presumptive evidence that the original diagnoses of "ptomain poisoning" were neither accurate nor correct. In addition, three outbreaks of so-called ptomain poisoning were proved by investigations to be "fake" stories or jokes. In four others the outbreaks of the illness were evidently due to idiosyncrasies of the persons affected for the food ingested.

RESULTS OF NECROPSIES

Several references have been made to the result of the necropsies performed in our series and their effect on the original diagnoses. In the 425 outbreaks of this series, forty-three necropsies, approximately 30 per cent, were performed in 145 deaths reported as having been due to "ptomain poisoning." It is extraordinarily interesting and important to note that in every instance the original diagnosis was changed to conditions which in some were clinically totally dissimilar. For instance, the final anatomic and pathologic diagnoses were: peritonitis, appendicitis, carbon monoxide, encephalitis, malaria, abortion, alcoholism, myocarditis, bacillary dysentery, diphtheria, arsenical poisoning, acute anterior poliomyelitis, ectopic pregnancy, angina pectoris, morphine poisoning, paraplegia, following arteriosclerosis, mercury poisoning, pneumonia, cerebral hemorrhage, endocarditis and tuberculosis.

CONCLUSIONS

The data collected and studied in this paper indicate that the diagnosis of "ptomain poisoning" should be promptly discarded by the medical profession because it is too inconclusive a term.

A clinical diagnosis of food poisoning, especially when it is suspected that the food is contaminated with certain bacteria or their toxins, should be supported by epidemiologic, bacteriologic and toxicologic investigation.

Moreover, the results of necropsies are a final indication that the diagnosis of "ptomain poisoning" is not only loosely used but may be a serious source of statistical error. In fact, the departments of health should carefully scrutinize such death certificates and demand confirmatory laboratory or other proof as ascertained by necropsy. Perhaps there may be some confusion existing in the minds of the medical profession since the "Manual of the International List of Causes of Death of the Bureau of the Census, Classification 175, Poisoning by Food," contains twenty-two classifications, which classifications could be very well divided into two, botulism and food poisoning. The latter could be further divided into bacterial food poisoning by the paratyphoid enteritidis group of bacteria and perhaps others, and mushroom poisoning.

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Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

CALCREOSE (See New and Nonofficial Remedies, 1927, p. 123).

The following dosage form has been accepted:

Compound Syrup of Calcreose.—A syrup containing in 100 cc. calcreose solution, 33.3 cc.; alcohol, 5 cc.; extractives from wild cherry, 4 Gm. (20 grains per fluidounce); chloroform, 0.6 cc. (3 minims per fluidounce); peppermint and other aromatic drugs.

Dosage.—Four to 8 cc. (1 to 2 fluidrachms).

ANTERIOR PITUITARY DESICCATED-LEDERLE.—The anterior lobe of the pituitary gland of cattle, dried and powdered, without the addition of preservative or diluent.

Actions and Uses.—See Pituitary Gland, New and Nonofficial Remedies, 1927, p. 285.

Dosage.—From 0.13 to 0.3 Gm. (2 to 5 grains) three times a day.

Manufactured by the Lederle Antitoxin Laboratories, New York. No U. S. patent or trademark.

Tablets Anterior Pituitary Desiccated-Lederle, 2 grains.

Tablets Anterior Pituitary Desiccated-Lederle, 5 grains.

The fresh glands are freed of extraneous matter, finely ground, spread on glass plates and dried rapidly in a current of warm air. Anterior pituitary desiccated-Lederle is a grayish powder with slight characteristic odor. One part represents approximately 5 parts of fresh substance.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

W. A. PUCKNER, SECRETARY.

Articles Not Acceptable

SANARTHRIT AND TELATUTEN NOT ACCEPTABLE FOR N. N. R.

Sanarthrit and Telatuten are products of Luitpold-Werk, Munich, Germany, distributed in the United States by East Brook, Inc., New York. According to the advertising, "Sanarthrit and Telatuten are tissue preparations which owe their origin to Professor Ernst Heilner of Munich." The circular states also that "Heilner achieved a unified and causal therapy of all forms of chronic arthritis, including gout, by the use of Sanarthrit, and successfully applied the same principle to the first causal treatment of arteriosclerosis by means of Telatuten."

SANARTHRIT

In the information received from Luitpold-Werk, Sanarthrit is said to be "a specific substance of protein nature; the definite chemical composition is not yet cleared up"; it is "made from animal cartilaginous tissue and purified." The advertising issued by East Brook, Inc., contains an equally indefinite statement regarding composition: "Sanarthrit is a colorless colloidal liquid made from the cartilage of calves. It is absolutely free from protein. The chemical nature of its effective principle is not defined. Probably each of several distinct substances which are contained in it is necessary for the therapeutic effect. These substances stand in specific relation to the tissues of the joints."

Sanarthrit is used intravenously. Its use is based on Heilner's theory, as stated in the advertising: "1. The chemical affinity existing between certain normal and physiological products of metabolism (e. g. uric acid) and certain tissues (e. g. cartilage) must not be carried through in the working of the cells of the organism as, those products penetrating into the tissue, a damaging of the latter must occur. 2. According to Heilner there exists a *natural physiological and local protection of the tissue* (protection by affinity) through which as through an ever renewed fire-guard certain affinities (e. g. uric acid) are prevented from penetating into the tissues forming the joint (e. g. cartilage). Now if this local protection of the tissue is perforated through one of the various causes considered till now as being primary (cf. above) [the reference is to 'various causes . . . infectious, static, traumatic, thermic or neurotic . . '] so that the cells that have to produce it are prevented from working properly, the bearer of physiological affinity will penetrate into the tissue as a destructive agent. Thus through uric acid penetrating into the cartilage, arthritis deformans, alcaptonurica will be the consequence. 3. The theory of local tissue protection is a general principle in organisation Arteriosclerosis e. g., develops where the tissue protection of the intima does not work properly and is unable to repulse the attacks of physiological affinities. According to Heilner, arthritis of any kind, arteriosclerosis * [A footnote explains that 'In the case of arteriosclerosis it is the affinity protection which lies before the intima of the vessels that does not work . . .'] and probably other chronic diseases of certain organs (muscles, liver, kidneys, etc.) as well as carcinoma, belong to the group of affinity diseases." This appears to be pure speculation and does not seem to have any experimental basis. It is claimed that the reactions which follow successful exhibition of the remedy are not anaphylactic; nevertheless the reactions discussed (fever, chills, malaria, etc.) are those which follow the injection of foreign protein.

The cases cited in the advertising as evidence for the value of treatment with Sanarthrit were not controlled. In some cases, treatment was unsuccessful with Sanarthrit alone.

The name of the product is therapeutically suggestive: san from sanere, to heal + arthrit, from the name of the disease, arthritis.

Sanarthrit is unacceptable for New and Nonofficial Remedies because the statement of its composition is vague and indefinite; because evidence is not offered to show that its composition is uniform; because it is marketed under a therapeutically suggestive, proprietary name and because the claims for its value are not supported by acceptable clinical evidence and are therefore unwarranted.

TELATUTEN

According to the information furnished the Council by the Luitpold-Werk, "Telatuten is a specific substance of protein nature; the definite composition is not yet cleared up" and it is "made from the entire blood-vessel wall (intima, media, adventitia) of slaughtered animals, and purified." In the advertising it is stated that Telatuten "is a liquid preparation from the bovine aortic walls and containing the physiologically effective principles of all three walls of the artery in definite proportions. It is absolutely free from protein." Information is not given as to how it is determined that the preparation contains "the physiologically effective principles of all three walls of the artery in definite proportions."

The pharmacologic action of Telatuten is stated to be "Restitution of the local tissue protection, by which certain noxious substances of the metabolism are prevented from penetrating." Its therapeutic indications are given as "Arteriosclerosis and its consequences; praesclerosis." It is claimed that "the action of Telatuten on the walls of the artery is of a specific nature. It supplies to them the elements which are needed for the restoration of the broken-down Local Tissue Protection." The product is said to be indicated in the treatment of all forms of arteriosclerosis. It is also proposed for the prevention of arteriosclerosis and its use is proposed in "early juvenile arteriosclerosis, in Huchard's presclerosis, and in individuals with a hereditary disposition towards arteriosclerosis due to congenital weakness of Local Tissue Protection." The advertising refers to Heilner's publications and contains abstracts of case reports by Heilner and others. This evidence is not of a convincing or conclusive character.

The name is therapeutically suggestive: Tela, tissue + tutamen, defense or defender.

Telatuten is unacceptable for New and Nonofficial Remedies because its composition is indefinite and no evidence is offered to show that its uniformity is controlled; because it is marketed under a therapeutically suggestive, proprietary name; and because there is no acceptable evidence for its therapeutic value and efficacy, the claims made for its use being therefore unwarranted.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, FEBRUARY 11, 1928

THE RIGHT OF PHYSICIANS TO DEDUCT TRAVELING EXPENSES

Senator Arthur R. Robinson of Indiana, at the request of many physicians in his state, has introduced in the Senate an amendment to the Tax Reduction Bill[1] to insure to physicians the right to deduct in the computation of their federal income taxes traveling expenses incurred in attending meetings of medical organizations. The proposed amendment insures to members of trade and business organizations generally this right, which seems to depend now wholly on bureaucratic rulings. If physicians desire the enactment of Senator Robinson's amendment they must in each state induce their Senators to stand solidly behind him in his effort to procure justice. The discrimination against the medical profession in existing law seems now to be frankly admitted by the Commissioner of Internal Revenue. In a recent letter he wrote: "The bureau has not made any general ruling in regard to the deductibility of traveling expenses incurred by business men, tradesmen, laboring men and professional men *other than physicians.*" Since the Commissioner's ruling against physicians was made in 1922, many questions must have arisen regarding the deductibility of traveling expenses of business men, tradesmen and laboring men, and of professional men other than physicians. Why, then, has it been found inexpedient to promulgate any general rule with respect to traveling expenses for the guidance of nonmedical taxpayers? If such a rule is not feasible or necessary for chemists, engineers, labor organizations, corporations and others, why is it feasible and necessary for physicians?

The fact that the Commissioner of Internal Revenue has denied only physicians the right to deduct traveling expenses incurred in attending the meetings of professional, business and trade organizations answers the question as to why no class other than physicians complains of the nondeductibility of these traveling expenses. The Commissioner, as he himself admits, has promulgated no rule denying the right of any other class to deduct such expenses. No other class has been aroused to a defense of its rights.

Although the present injustice rests on the medical profession alone, the situation presents a larger danger. If the Commissioner of Internal Revenue, by his mere fiat, can establish in the case of physicians a conclusive presumption of the nondeductibility of traveling expenses, he can in like manner lay down similar presumptions for other professions and for business and trades generally. To the extent that he can do this, our government ceases to be a government of law and becomes a government by bureaucratic ukase.

Senator Robinson has opened a way to obtain for the physicians of the country the justice for which they have so long been clamoring. It remains now for them to support him in his movement. The likelihood of success is in proportion to the activity of the medical profession. Letters and telegrams to Senators urging them to support Senator Robinson should be sent immediately if the movement is to succeed.

1. H. R. 1. A Bill to reduce and equalize taxation, provide revenue, and for other purposes.

CARBON MONOXIDE IN GARAGES

One might suppose that the menace of carbon monoxide had been brought sufficiently to the attention of the public to avert frequent disaster. Apparently this is not yet the case. Carbon monoxide originates from the incomplete combustion of carbonaceous material. It is a component of illuminating gas which formerly occasioned nearly all the cases of poisoning with the compound. Today the automobile supplies the greatest danger. According to Henderson and Haggard[1] the exhaust gas from internal combustion engines contains carbon monoxide in percentages ranging from a fraction of 1 per cent to 7 per cent or even higher. The variation depends on the proportion of air and gasoline in the mixture burned; the carbon monoxide increases with increase in the proportion of gasoline, that is, with a rich mixture. A rough estimate of the volume of carbon monoxide that an automobile may produce is 1 cubic foot (28 liters) a minute for each 20 horse power. This is sufficient to render the atmosphere of a single car garage deadly within five minutes, if the engine is run while the garage doors are closed. A man breathing such an atmosphere often falls helpless before he realizes that he is affected; hence many fatalities. In streets where traffic is congested, the content of carbon monoxide rises to about 100 parts per million of air, enough to cause slight headache after long exposure.

The number of large commercial garages is steadily increasing. In these one might expect a better appreciation of the menace and greater effort in combating

1. Henderson, Yandell; and Haggard, H. W.: Noxious Gases and the Principles of Respiration Influencing Their Action, New York, Chemical Catalog Company, 1927.

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it to prevail. The Bureau of Mines[2] has recently undertaken a study of the actual conditions that prevail. There are numerous data already on record[3] that indicate the presence of as much as 2,000 parts of carbon monoxide per million to have been detected in public garages. The estimations were usually made on chance samples of air and can scarcely be regarded as representative of average prevailing conditions. The new government records were continuous in character over long periods of time. The maximum indication of the objectionable gas exceeded 890 parts per million momentarily on a few occasions. The average concentration rarely exceeded 100 parts per million of the atmosphere, the highest average for any one hour being 433 parts. The investigators assert that the carbon monoxide was not found injurious, but cold weather did not occur during the period of the records. In extremely cold weather when garages are kept more tightly closed to retain heat, worse conditions may develop if operations are otherwise the same.

According to a careful investigation,[4] 400 parts of carbon monoxide per million of air is a maximum that may be endured by persons for one hour without noticeable effects, and 100 parts per million may be taken as a maximum for continuous exposure for about seven hours a day without noticeable effects. The facts on record indicate that the ventilation of garages will still bear careful watching if the atmosphere developed in them, particularly in severe weather, is to be retained above reproach from the point of view of hygiene.

DEATHS OF PHYSICIANS

During 1927, THE JOURNAL published the obituaries of 2,790 physicians of the United States, including ten who were temporarily absent from the country or who resided in Alaska, Hawaii or Porto Rico. This number is larger by 113 than the number reported last year and comprises 2,689 male white physicians, eighty-three women and eighteen negroes. Deducting the number of deaths published from the number of graduates of medical schools for the fiscal year ended June 30, 1927, leaves a net increase in the profession of 1,245.

Ages.—The average age of physicians whose obituaries were published in 1927 was 62 years. The average age of the 1926 decedents was 62.8 years. Ninety-one physicians lived to be 85 or more years of age and one lived to be 102; 164 died in the age period 80-84; 236 died between 75 and 79 years of age; 362 between 70 and 74; 389 between 65 and 69; 379 between 60 and 64; 380 between 55 and 59; 296 between 50 and 54; 230 between 45 and 49; 108 between 40 and 44; 80 between 35 and 39; forty-six between 30 and 34, and twenty-nine between 25 and 29 years of age. It is of interest, although probably not significant, to note in some states the percentage of physicians who lived eighty-five or more years; it was 7.2 in Indiana; 5.2 in California; 4.7 in Illinois; 3 in Ohio; 2.8 in Pennsylvania; 2.7 in Massachusetts; 1.3 in New York, and 0.82 in Texas. In 1926, California was first in this list, then Illinois, Massachusetts, Ohio, Indiana, New York and Pennsylvania. March was again the month of most deaths, with 245.

Accidental Deaths.—There were 140 physicians who died as the result of accidents, a sharp rise above the ninety-four of the previous year, which amounts to an increase of almost 49 per cent. The automobile figured in sixty-six deaths, an increase of thirty, or of 83 per cent, over 1926; falls killed twenty-five, an increase of nine; drowning, fifteen, an increase of six; firearms, seven; railroads, six; overdoses of medicine, six; burns, two, and each of the following one: motorcycle, airplane, propeller of yacht, prune pit in throat, automobile exhaust gas, roentgen-ray equipment, illuminating gas, attack by a bull, and explosion. The circumstances were not specified in four cases.

Suicides and Homicides.—Suicides increased from thirty-seven in 1926 to forty-nine published in 1927. As usual, the favorite method was firearms, in seventeen cases. Poison killed eight; gas, six; incised wounds, five; drowning, five; drugs, four; hanging, two; anesthetic and jumping from high places, each one. There were fourteen homicides, four of which were by patients or their relatives.

Causes of Death.—Some contributory causes are again included in this tabulation. A report stating that the cause was, for example, influenza and pneumonia is tabulated under both diseases. The most common cause of death reported during 1927 was heart disease. Of the 851 reports of heart disease, 125 specified angina pectoris and 203 endocarditis or myocarditis. The second most frequent cause was cerebral hemorrhage, with 326 deaths, 18.1 per cent of which occurred before the physicians were 55 years of age. Paralysis was reported in forty-six other cases, and of these only 8.7 per cent occurred before 55 years of age. Pneumonia, the third most frequent cause, was reported in 259 cases; bronchopneumonia was specified in forty-three. Thus far down the list the order is the same as it was last year, but a new occupant, cancer, now takes fourth place, coming up from fifth in 1926. Cancer, with 228 deaths, displaced nephritis, which was in fourth place. Cancer of the stomach and liver accounted for fifty-nine deaths; cancer of the intestine, thirty-eight; of the prostate, twenty; of the buccal cavity, seventeen; of the female genital organs, two; in ninety-two cases the organ affected was not specified. Another incident which may not be significant was that 33 per cent of the cancer deaths in 1927 occurred after the physicians were 70 years of age, whereas in the

2. Katz, S. H., and Frevert, H. W.: Carbon Monoxide in Two Large Garages, J. Indust. & Engin. Chem. **20**: 31 (Jan.) 1928.
3. Ciampolini, E.: J. Indust. Hyg. **6**: 102 (July) 1924.
4. Henderson, Haggard, Teague, Prince and Wunderlich: J. Indust. Hyg. **3**: 72, 137 (July) 1921.

previous year this figure amounted to more than 90 per cent. Fifth on the list of most frequent causes is nephritis, with 205 deaths, with twenty-three cases specified as acute; sixth is accidents; seventh, arteriosclerosis, with eighty-eight deaths; tuberculosis was eighth on the list, with seventy-five deaths, of which sixty-nine were specified as pulmonary. The ninth place belongs to "embolism and thrombosis," with fifty-seven deaths. It should be noted that cases of coronary thrombosis were tabulated under this head. Then comes diabetes, with forty-four deaths, 25 per cent of which occurred after 70 years of age. Last year 42 per cent of the diabetes deaths occurred after 70 years of age. Cholecystitis and cholelithiasis also caused forty-four deaths; appendicitis, thirty-six; influenza, thirty, a decrease from sixty-one of the previous year; septicemia, twenty-one; cirrhosis of the liver, twenty-one, as compared with twelve for the previous year; that may also be significant. Diseases of the prostate other than cancer caused twenty-six deaths; ulcer of the stomach or duodenum, nineteen; brain tumor, sixteen; meningitis, twelve; encephalitis, ten; leukemia, nine; general paralysis of the insane, eight; typhoid, five; paratyphoid, two, and locomotor ataxia, alcoholism, drug addiction and pellagra, each three. Among the rarer causes were carbuncle, two; acute articular rheumatism, two, and each of the following one: agranulocytic angina, food poisoning, splenomegaly, purpura hemorrhagica, Hodgkin's disease, sprue. Those which could not be classified so specifically included three under "other diseases of the spinal cord"; sixteen under other diseases of the genito-urinary system; eleven under diseases of the bones and organs of locomotion; seventeen under other diseases of the nervous system; twenty under other diseases of the respiratory tract; forty-four under other diseases of the digestive tract; fifty-seven under uremia; forty-seven under senility. The cause of death in thirty-six cases could not be classified because the necessary information was not at hand.

Civil and Military Activities.—There were 169 physicians reported dead in 1927 who had been teachers in medical schools; sixty-seven who had been members of boards of education; sixty-three, members of boards of health; twenty-five, members of state legislatures; twenty-three, members of boards of medical examiners; thirty-three, coroners; twenty-three, authors; twenty-five, druggists; thirty-seven, mayors; sixteen, members of city councils; eighteen, bank presidents; fifteen, editors; ten, dentists; six, justices of the peace; four, missionaries; three, lawyers; three, postmasters; two, judges; five, clergymen; thirteen, members of the U. S. Navy; six of the army; thirty-one who served in the Spanish-American War; eighty-nine veterans of the Civil War, and 186 veterans of the World War.

Association Officers.—Among those who died in 1927 were two former vice presidents of the American Medical Association; twelve members or former members of the House of Delegates; one trustee; ten section officers, and one member of a council.

Current Comment

WHO'S WHO—AND IS HE?

During the last few months there seems to have been a sudden recrudescence of the old scheme of wheedling cash from the proud though unwary, by offering to circulate their biographies in volumes of various titles. Physicians, particularly, are sought as candidates for inclusion in such books of reference. Indeed, the publishers of the original Who's Who have issued a circular relative to these ventures, disclaiming any connection with them. Specifically, the publications repudiated include Who's Who in the Central States, Who's Who in California, in Florida, in Dixie, in the South, in the West, in the East, and On the Pacific Coast. However, the biographic distribution is not the only method of attracting the proud ones. It is also possible to make collections on the basis of race, religion, nationality, profession, hobbies and other general interests. The upkeep on such publicity is considerable. Purely as advertising matter it is hardly worth the price.

RETIREMENT OF DISABLED MEDICAL OFFICERS OF THE WORLD WAR

Bills are now pending in the Senate [1] and in the House of Representatives [2] to create an emergency officers' retired list for officers who are suffering from not less than 30 per cent total disability, because of injuries received or diseases contracted in the line of duty while serving as emergency officers in the army during the World War. Officers transferred to the proposed list are to receive retired pay computed on the basis of the rank they held at the time of their discharge from the military service. They are to be entitled to the same privileges as are granted regular officers of the army retired on account of physical disability incurred in the line of duty. At present they are entitled only to compensation benefits based on the estimated percentage of disability, without regard to rank. Emergency officers who served in the army are now the only officers to whom the privileges of retirement such as is proposed by the pending legislation have not already been granted. Regular and provisional officers in the army, navy and marine corps, and emergency officers in the navy and marine corps have all been cared for. Of the three thousand emergency officers in the army, whom the pending legislation will put on the same basis as the eight other groups, about six hundred, it is said, are physicians. The House of Delegates of the American Medical Association has on two occasions endorsed the principle underlying the pending legislation.[3] The pending bills have been

1. S. 727.
2. H. R. 500.
3. Proceedings of the House of Delegates, St. Louis Session, May 25, 1922, page 44; Proceedings of the House of Delegates, Washington Session, May 18, 1927, page 58.

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favorably reported by the committees of the Senate and the House of Representatives to which they were referred and are now on the Senate and the House calendars. Physicians, through their organizations and acting individually, should get into touch with their senators and representatives and urge prompt and favorable action.

Association News

THE MINNEAPOLIS SESSION

Scientific Exhibit: Announcement of Exhibit by Section on Radiology

At the Washington session the Section on Radiology passed a resolution calling for the appointment of a committee from that section to cooperate with the Department of Scientific Exhibit. The members of this committee are: R. G. Allison, Minneapolis; B. H. Nichols, Cleveland, and P. M. Hickey, Ann Arbor, Mich.

The committee announces that the proposed exhibits of the Section on Radiology will be along the following lines:

1. Visualization and nonvisualization of the gallbladder.
2. The use of iodized oil in the demonstration of pulmonary conditions.
3. Selected exhibits of educational and research value.

The Cooperative Committee on Fractures will feature at the coming meeting:

1. Fractures of the tibia and fibula.
2. Fractures of the ankle joint.
3. Fractures of the clavicle.
4. Supercondylar fractures of the humerus.

Therefore, exhibits are solicited by the Committee on Radiology which could help in the educational program of the Cooperative Committee on Fractures.

The committee believes that one of the functions of the Section on Radiology is to assist in the educational work of the American Medical Association. One of the ways in which this educational program can be fostered is by a worthy exhibit by members of the Section on Radiology.

The radiologic exhibits should be in the form of prints suitably mounted on cardboards of uniform size with ample printed explanatory legends. This suggestion is not intended to discourage the use of illuminating boxes, properly designed and properly lighted.

The members of the specialty are asked to take an inventory of the materials that might illustrate phases of these subjects and communicate with the chairman of the committee, Dr. P. M. Hickey, University Hospital, Ann Arbor, Mich. All applications must be made on the regular application form, which is the one required by the A. M. A. Committee on Scientific Exhibit. A circular letter giving information concerning this exhibit, together with the usual application blank, will be sent to all those who have registered in the section during the past two years. Those who have not registered in this section, but who are interested in such an exhibit, may obtain a circular letter and application blank by sending the request to Dr. Hickey. Applications should be filed not later than March 1 with Dr. Hickey.

Clinical Research.—The observant physician possessed of the critical faculty can do more to advance medicine by his work at the bedside than many who lead a sheltered life in a laboratory. The investigator who aims at extending the boundaries of knowledge must have initiative and courage, and above all must possess vision, for without that uncanny power of seeing into the nature of things and discovering secrets hidden from others the laboratory worker may obscure the path of progress and become a real danger to the advance of knowledge.—Ramsay, A. M.: *Brit. M. J.* **2**:1216 (Dec. 31) 1927.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Society News.—Drs. Thomas C. Neece, Walnut Ridge, read a paper before the Lawrence County Medical Society, Hoxie, recently, on "Infantile Paralysis," and Charles C. Townsend, Walnut Ridge, on "The Strenuous Life of Medicine."——Dr. Frank P. Hardy, Center Hill, read a paper on "Glandular Tularemia" before the White County Medical Society, Searcy, January 5.

Faker Sells Accident Policies to Physicians.—A man representing himself as O. Mason and as an agent of the Occidental Life Insurance Company of Los Angeles recently sold accident policies to physicians in the vicinity of Benton. When the policies were not delivered, an investigation disclosed that the money was obtained by fraudulent methods as the company did not have any licensed agent in Arkansas. Mason is about 40 years of age, and 66 inches in height; he wore glasses and had a small mustache. Any information concerning the whereabouts of this man will be forwarded by this office to interested persons.

CALIFORNIA

Mussels Quarantined.—The state department of public health placed a quarantine on California mussels last July, following a number of deaths and cases of poisoning. The sale of mussels was prohibited until further notice. The quarantine is still in force in all parts of the state except in the following communities, where it has been lifted following an investigation:

Coronado Beach, San Diego County.
Monterey, Monterey County.
Candle Stock Point, Bay Shore, San Mateo County.
Sierra Point, West Berkeley.
Winehaven, Contra Costa County.
Marine Island, Point Richmond, Contra Costa County.

The Los Angeles "Daily Program."—The clinical and statistical section of the Los Angeles County Medical Association, Los Angeles, has undertaken the publication of the *Daily Program* listing all operations and clinics held in accredited hospitals of the city. Members of the association and visiting physicians are invited to attend these clinics. Out-of-town visitors may secure information concerning each day's program through the office of the clinical and statistical section of the Los Angeles County Medical Association, 412 West Sixth Street. It is the ultimate object of the section to pay particular attention to the compilation of statistics by keeping an accurate report of operations and results.

Pediatrics a Full Department at Stanford.—Pediatrics, which heretofore has been a division of the department of internal medicine at Stanford University School of Medicine, San Francisco, has been made a full department in the medical school, with Dr. Harold K. Faber as professor of pediatrics. Stanford University is to receive $100,000 by the will of the late Dr. Morris Herzstein of San Francisco for a chair in biology. Mr. Edward M. Mills has given the medical school $500 for free beds for children; Miss Helen E. Cowell, $1,000 for a physical therapy division for indigent patients; Mr. Roy N. Bishop, $2,500, and George T. Camerson, $500 to the Wellington Gregg Fund for the Study of Nephritis; Mrs. Ann Whitney Sperry, $610 for Protestant and Catholic crippled and orphaned children of San Francisco, and a grateful patient, $100 for surgical research.

FLORIDA

Society News.—Among others, Dr. Frederick F. Kumm, St. Petersburg, addressed the Pinellas County Medical Society in December on "Physiology of the Cardiac Arrhythmias," and Dr. George M. Lochner, St. Petersburg, on "Arthritis Deformans."——Dr. Robert B. McIver, Jacksonville, gave an illustrated address before the Suwannee River Medical Society, recently, at Madison, on "Abdominal Tumors": Dr. Thomas S. Anderson, Live Oak, was elected president at this meeting.

Tampa Has a New Health Officer.—Dr. Charles W. Bartlett has been appointed health officer of the city of Tampa to succeed Dr. Ernest C. Levy, who came to Tampa from

Richmond, Va., more than two years ago. Dr. Bartlett was born in Cuba and graduated from the University of Maryland School of Medicine, Baltimore, in 1893. He has been engaged in public health work in connection with the state board of health for many years, and has served on the board of public works and as city commissioner.

GEORGIA

Personal.—Dr. Nelson A. Bryan, formerly of Atlanta, sailed, January 17, for the Southern Baptist Mission Hospital at Hwanghsien, China; he will be the only American physician connected with the hospital.

Health Officers' Meeting.—The annual meeting of the Georgia Health Officers' Association was held at Atlanta, January 20-21. Governor Hardman gave the address of welcome; among the other speakers were Drs. Douglas L. Cannon of the Alabama State Health Department; Winfield K. Sharp, Jr., of the Tennessee State Health Department; Crete N. Sisk of the North Carolina State Health Department, and Victor H. Bassett, health officer of Savannah.

ILLINOIS

Negro Deaths Nearly Equal Births.—Only 104 negroes are born in Illinois for every hundred negro deaths, according to the state health director, while 183 Caucasians are born for every hundred deaths. The mortality rate among negroes in Illinois averages nearly 25 per thousand a year, more than double the death rate in the white population. In 1925, there were only ninety-four more negro births than deaths in Illinois and the ratio has not changed. The difficulty is not a low birth rate, as it has averaged about 25 per thousand of negro population for several years. On the other hand, the death rate among infants averaged more than 140 per thousand, while among white children less than 1 year of age it was about 70. The negro is particularly susceptible to respiratory diseases. In 1924, for example, pulmonary tuberculosis caused 323 deaths per hundred thousand among negroes in the state against a rate of 81 in the state at large. In that year, the rate for pneumonia was 330 among negroes, and in the state as a whole, 83.

Chicago

Special Meeting of South Side Branches.—The seven south side branches of the Chicago Medical Society will hold a joint meeting at Mandel Hall, University of Chicago, February 16, 8:30 p. m., which the trustees of the American Medical Association have accepted an invitation to attend. Addresses will be made by the President of the American Medical Association, Dr. Jabez N. Jackson, Kansas City, Mo.; the chairman of the Board of Trustees, Dr. Edward B. Heckel, Pittsburgh, and the Secretary and General Manager, Dr. Olin West, Chicago. The president of the Illinois State Medical Society, Dr. G. Henry Mundt, Chicago, will preside; other speakers will be the president-elect of the state medical society, Dr. John E. Tuite, Rockford; the chairman of the council, Dr. William D. Chapman, Silvis, and the secretary, Dr. Harold M. Camp, Monmouth.

Cook County Children's Hospital.—It is expected that the new children's building at the Cook County Hospital will be occupied soon, adding about 500 beds for children to the hospital and making its total capacity 3,200. The cost of the children's building has been about $1,000,000. The total investment in hospital buildings of Cook County now amounts to $14,000,000. The wards for children in this building are cubicled, the child always being in sight of the nurse. The fifth and sixth floors will be left unfinished for the present. The seventh floor is for physical therapy, and includes also a schoolhouse and playrooms. The decorating has been done in cheerful colors. There is a lecture room, accommodating 100 students, and the building is connected by a tunnel with the general hospital. The staff of the children's hospital will comprise a number of prominent members of the faculties of Chicago's best medical schools.

Society News.—At the four hundred and thirty-second regular meeting of the Chicago Gynecological Society, Murphy Memorial Building, 50 East Erie Street, February 17, Dr. Alexander M. Campbell, Grand Rapids, Mich., will read a paper on "Chorea Gravidarum"; Dr. Jacob P. Greenhill on "Vaginal Discharge Due to Trichomonas Vaginalis," and Dr. Otto S. Pavlik, "Preservation of Ovary by Means of Intra-Uterine Transplantation in Radical Operation for Adnexal Disease."——William T. Bovie, Ph.D., professor of biophysics, Northwestern University Medical School, addressed the Chicago Medical Society, February 8, on "Significance of Wavelength in the Therapeutic Use of Light," and Dr. Jacob S. Grove, "Treatment of Gonorrhea in Some European Clinics."——Among others, Dr. Daniel B. Hayden addressed the Chicago Laryngological and Otological Society, February 6, on changes in labyrinthine responses produced by rapid blood pressure changes.——The annual meeting of the Chicago Orthopedic Club was addressed, February 10, among others, by Dr. John Ridlon on "Rest in the Treatment of Chronic Joint Disease," and by Dr. Philip H. Kreuscher on "Demonstration of the Arthroscope."

University to Build Hospital for Crippled Children.—The president of the University of Chicago announces that the Home for Destitute Crippled Children, founded in 1892, will transfer its main hospital to the university campus on the Midway where new buildings providing 100 beds will be in operation by the summer of 1929. Part of the present plant of the home on Paulina Street and Maypole Avenue will be maintained as an emergency hospital and free dispensary for the needs of the west side. The building retained there will continue to be known as "The Nancy McElwee Memorial," as will the new buildings on the south side in memory of the daughter of Mrs. Elizabeth S. McElwee and her late husband, Robert. Mrs. McElwee, who for thirty years has sponsored work among crippled children, has given $300,000 for the new building. Mrs. Gertrude Dunn Hicks has given another $300,000 to the university for an orthopedic hospital which will be used to erect the other division of the building to house the home and will be known as "The Gertrude Dunn Hicks Memorial." The Home for Destitute Crippled Children will continue to operate the hospital as heretofore, the university providing the medical care. President Mason, in making the announcement, considers this another step toward establishing at the university a clinic for children similar to those in Vienna and Berlin. In addition to the home, the units assuring children's work at the university include the Bobs Roberts Memorial for Children, the Charles Gilman Smith Memorial for Infectious Diseases, the Chicago Lying-In Hospital, and the Country Home for Convalescent Children at Prince's Crossing near Wheaton, which will provide about 350 beds when completed. Ninety-five children are living in the Home for Destitute Crippled Children at present. In its files are histories of nearly 18,000 cases, 1,130 having been treated in the hospital last year. It is considered one of the outstanding organizations of its type in the country.

INDIANA

License Restored.—At the January 10 meeting of the state board of medical registration and examination, Indianapolis, the board restored the license of Dr. Frederick J. Freshley, Plainville, which, it is reported, was revoked in 1922 for violation of the antinarcotic law.

Pastor and Diploma Mill Operator Arraigned.—Rev. Mr. Gunsolus, 515 Blake Street, Indianapolis, said to be president of the Central Scientific College, Fargo, N. D., and Otis J. Briggs, dean of the College of Drugless Physicians, 213 Empire Life Building, Indianapolis, were arraigned, January 17, before U. S. Commissioner Young. They were arrested, it is reported, on a charge of using the mails to defraud in connection with the issuance of diplomas dated so that recipients would not be forced to take state medical examinations. Reverend Gunsolus provided a bond for his appearance in Washington (THE JOURNAL, January 14, p. 125).

Medical School Dedicates Wing.—The Indiana University School of Medicine, Indianapolis, has dedicated the wing recently added to the building on West Michigan Street at a cost of $150,000. The informal ceremony was held in the new auditorium, which seats more than 400. Cases were presented from the university hospitals, and addresses were made by members of the faculty including B. Bernard Turner, Ph.D., Drs. Burton D. Myers and Harold M. Trusler. The wing contains the auditorium, class rooms and administrative offices. The space formerly used for these purposes in the main building has been rearranged for laboratories and for library purposes. The medical school of the university gives the first year of its course at Bloomington and the last three years at Indianapolis, where it now has facilities to accommodate 100 students in each of those years.

University Appointments.—Dr. Willis Dew Gatch, Indianapolis, has been appointed head of the department of surgery, including gynecology and orthopedic surgery, in the Indiana University School of Medicine at Indianapolis, succeeding the late Dr. John H. Oliver. Dr. William H. Kennedy was appointed associate professor in medicine (radium therapy). Dr. Henry O. Mertz was promoted from assistant to asso-

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ciate professor in genito-urinary surgery. The following physicians have been added to the staff: Gerald W. Gustafson, assistant in obstetrics; Edwin L. Libbert, assistant in medicine; Walter P. Morton, assistant in genito-urinary surgery; John M. Taylor and Walter B. Tinsley, assistants in dermatology and syphilology; George W. Wood, assistant in gynecology; Joseph J. Littell, Edmund Ochos Alvis, Bert E. Ellis, Guy W. Seaton and Henry W. Irwin, assistants in rhinology, otology and laryngology.

Society News.—Dr. Lacey L. Shuler, Indianapolis, addressed the Johnson County Medical Society, Franklin, January 24, on "Plaster of Paris and Some Factors on Fractures."——Dr. Fred H. Albee, New York, addressed the Fort Wayne Medical Society, January 24, on "Electrically Driven Machine Tools in Bone Surgery."——The Indiana Roentgen Society was organized, January 28; Dr. Raymond C. Beeler, Indianapolis, was elected president, and Dr. Carl S. Oakman, Muncie, secretary.——Dr. John W. Carmack, Indianapolis, addressed the Tri-County Medical Society, North Vernon, January 25, on "Upper Respiratory Infections."——Dr. George S. Bond, Indianapolis, addressed the Hendricks County Medical Society, Danville, January 27, on "Goiter."——A clinical program was presented before the Indianapolis Medical Society by Dr. Ezra Vernon Hahn, Indianapolis, on "Sickle Cell Anemia" at the auditorium of the Indiana University School of Medicine, January 31; other speakers were Drs. Horace R. Allen, Arthur S. Ayres, Thurman B. Rice, Charles P. Emerson and William E. George.——Dr. Lowell D. Snorf, Chicago, addressed the Jasper and Newton County Medical Society, Remington, January 26, on "Treatment of Gastric and Duodenal Ulcer."——Dr. Claude S. Beck, Western Reserve University School of Medicine, Cleveland, will address the Muncie Academy of Medicine, February 17, on "Diseases of the Heart and Pericardium Amenable to Surgical Treatment."

MAINE

Personal.—Dr. James W. Loughlin has been appointed health officer for the third district, comprising Lincoln, Knox, Waldo and Sagadahoc counties, with headquarters at Newcastle, to succeed Dr. George E. Parsons, who resigned to engage in practice at Millinocket. Dr. Loughlin for several years has been on the staff of the National Soldiers' Home at Togus.——Dr. Easton S. Lothrop was appointed city physician of Portland, recently.

Society Honors Veteran Members.—In recognition of their years of service to the community as practitioners of medicine, the Cumberland County Medical Society has made the following physicians honorary members of the society:

Dr. Abner O. Shaw, in practice sixty-five years.
Dr. Bertrand F. Dunn, in practice sixty years.
Dr. James A. Spalding, in practice fifty-eight years.
Dr. Stanley P. Warren, in practice fifty-four years.
Dr. George B. Swasey, in practice fifty-three years.
Dr. Charles W. Foster, in practice fifty-three years.
Dr. Erastus E. Holt, in practice fifty-three years.
Dr. Charles H. Cumston, in practice fifty-one years.
Dr. Augustus S. Thayer, in practice sixty-four years.

Dr. Cumston resides in Brunswick; the other honored members in Portland.

MICHIGAN

Debate on Evolution.—Under the auspices of the entertainment committee of the Wayne County Medical Society, a debate was held at the auditorium of the Detroit City College, January 31, on the question "Resolved That the Theory of Organic Evolution Is Established by the Science of Biology." The affirmative was taken by Dr. William A. N. Dorland, Chicago, author of the "American Illustrated Medical Dictionary," and the negative by Mr. Harry Rimmer, Los Angeles, curator of the Museum of Natural History, Kansas State Teachers' College. The public was invited; a section of the auditorium was reserved for physicians and their wives.

Endowment to Further Biologic Living.—At the close of the Race Betterment Conference at Battle Creek, January 6, it was announced that Mrs. Mary F. Henderson, Washington, D. C., had given $200,000 in cash and provided for a $2,000,000 endowment to be used in promoting the health and race betterment ideals advocated by the Battle Creek Sanatorium and Battle Creek College. The gift was unsolicited and came from a desire on the part of the donor to communicate to others information that had benefited her. It will be used, it is said, to promote the work of the college, to provide lectures on race betterment and to spread information relative to the promotion of health and prolongation of life.

Convalescent Measles Serum Wanted.—The Detroit City Health Department desires to secure a supply of convalescent measles serum and will pay to any person, preferably an adult, who has recovered from measles in the last few months $10 each time that person comes to the department's clinic and permits a specimen of blood to be taken. The serum will then be made available to physicians of the city free of charge. The health commissioner hopes that a large number of donors will register with the department at once, as there has been an unexpected increase in measles. Since the middle of November, the curve of increase has paralleled the curve of increase for the 1926 outbreak which came to its peak in February. During 1926, there was an outbreak of measles in Detroit amounting to more than 15,000 cases.

Society News.—Dr. Franz Groedel, Bad Nauheim, Germany, addressed the Wayne County Medical Society, Detroit, January 17, on "Physical Treatment of Diseases of the Circulatory System."——Drs. George Van Amber Brown and Frank A. Kelly addressed the West Side Physicians Association, Detroit, January 19, on "State Medicine" and "Medical Advertising," respectively.——Dr. Raphael Isaacs and Harry B. Friedgood of the Simpson Memorial Institute, Ann Arbor, addressed the Lenawee County Society, Adrian, January 19, on "Recent Advances in Diagnosis and Treatment of Pernicious Anemia."——The West Side Physicians Association, Detroit, held a symposium, February 2, on treatment of neisserian infection; the speakers were Drs. Ray S. Dixon, Samuel A. Flaherty and Harold L. Morris.——Dr. Martin A. Mortensen, Battle Creek, addressed the Highland Park Physicians' Club, recently, on "Diseases of the Aorta and Coronary Vessels."

Personal.—Dr. Ray S. Dixon, director of venereal clinics, department of health of Detroit, delivered the De Lamar lecture on hygiene at the Johns Hopkins School of Hygiene and Public Health, January 24, on "Factors in the Control of Venereal Disease."——Dr. John Sundwall, professor and director, division of hygiene, public health and physical education, University of Michigan Medical School, Ann Arbor, was elected president of the Michigan Public Health Association at its seventh annual meeting, Lansing, January 13.——The Highland Park Rotary Club recently gave a farewell dinner in honor of Dr. Elisha W. Caster, Detroit, who has moved to Yale, Mich.——Dr. John L. Chester, Detroit, has been elected president of the staff of Eloise State Hospital.——Dr. Aldred S. Warthin, professor of pathology, University of Michigan Medical School, Ann Arbor, will address the Academy of Medicine of Toronto, Canada, February 28, on "The General Pathology of Latent Syphilis."——Dr. Robert C. Fraser has been elected a director of the Port Huron Hospital, Port Huron, to succeed the late Dr. Richard K. Wheeler.

MINNESOTA

Hospital News.—The St. Cloud Hospital, St. Cloud, which has been under construction for two years was expected to be ready for occupancy about January 15.——The Dr. O. V. Johnson Hospital, Sebeka, was recently destroyed by fire.——The U. S. Bureau of Biological Survey has established at the University of Minnesota a research station for the study of diseases of fur-bearing animals.

Minnesota Alumni Reunion.—The University of Minnesota Medical Alumni Association is planning a homecoming banquet and golf tournament to be held in Minneapolis during the annual session of the American Medical Association in June, and has adopted the slogan "Minnesota's Greatest Homecoming Banquet," hoping that all the 1,800 graduates of the medical school will be present to talk over school days at the Nicollet Hotel, June 13, following a golf tournament in the afternoon. The chairman of the reunion is Dr. Naboth O. Pearce, 823 Nicollet Avenue, Minneapolis.

Personal.—Dr. Harold S. Diehl, associate professor and head of the department of preventive medicine and public health, University of Minnesota Medical School, Minneapolis, has been reelected president of the American Student Health Association which met recently in New York.——Dr. Louis B. Wilson, Mayo Clinic, Rochester, Minn., has been made a corresponding member of the Royal Academy of Medicine of Rome; Dr. George B. Eusterman of the Mayo Clinic gave an illustrated lecture before the Society of the Alumni of Bellevue Hospital, New York, January 4, on "Consideration of the More Uncommon Lesions of the Stomach and Duodenum with Differential Diagnosis."——Governor Christianson has appointed Drs. Solon Marx White, Minneapolis, and Oscar F. Mellby, Thief River Falls, members of the state board of health.——Dr. Axel E. Hedback was elected president of the Hennepin County Medical Society, Minneapolis.

for 1928.——Drs. William J. and Charles H. Mayo, Rochester, have been made honorary members of the Sociedade Brasileira de Urologia. The latter has also been appointed a member of the board of governors of Northwestern University Foundation, Evanston, Ill.——Dr. Hobart C. Johnson, Minneapolis, will take up the duties of a medical missionary in British East Africa following a six months' course in the school of tropical medicine and hygiene at the University of London.

Society News—Prizes for Attendance.—At the annual meeting of the Red River Valley Medical Society, Crookston, in December, Dr. Charles M. Adkins, Grygla, received a year's subscription to *Hygeia* as a prize for the physician who came the longest distance to attend the meeting; Dr. Adkins traveled about eighty-two miles. A copy of "New Medical Follies" was given to Dr. George S. Wattam, Warren, the oldest physician attending; a three years' subscription to the *Northwestern Health Journal* was given to Mrs. Chester L. Oppegaard, Crookston, as the most recent physician's wife. Notwithstanding severe weather and almost impassable roads, forty-five attended the annual dinner and annual business meeting. The program was devoted to medical economics; "The Problem of Medical Fees" was discussed by Dr. Herbert H. Hodgson, Crookston, and Mr. C. F. Franz; "The General Practitioner" by Drs. William H. Henney, McIntosh, and Joseph A. Roy, Red Lake Falls. Senator J. H. Hougen, Crookston, discussed "The Doctor and the Law," and Dr. John F. Norman, Crookston, was elected president for the ensuing year.——The Minneapolis Surgical Society, Minneapolis, met at the home of Dr. James Frank Corbett, February 2, and was addressed, among others, by Dr. Henning F. B. Wiese on "Embolectomy, with Report of Removal of an Embolus from the Brachial Artery"; the January meeting was at the Minneapolis General Hospital; Dr. Edward A. Regnier discussed "The Treatment of Arteriosclerotic Gangrene," and Dr. Richard R. Cranmer, "Operative Treatment of Fractures, Especially of the Humerus."

MISSISSIPPI

Bill Introduced.—House bill 201 provides that all actions for personal injuries shall be commenced within two years after the cause of such action has arisen. It is very probable that actions for malpractice would be classed as actions for "personal injuries."

MONTANA

Personal.—Dr. Curtis W. Wilder has been elected president of the Kiwanis Club of Lewistown.——Dr. Harry A. Tash, Butte, has been elected president of the Kiwanis Club of that city.——Dr. Wilson A. Russell is health officer of the new Big Horn County full-time health unit which was established with the assistance of the Rockefeller Foundation and the state board of health.——Dr. Frank D. Pease, Missoula, has been appointed in charge of the laboratory of St. Patrick's Hospital.

NEBRASKA

Society News.—The Thayer County Medical Society plans to celebrate its twenty-fifth anniversary in April; Dr. Harry H. Stretton, Chester, recently elected president, and Dr. Charles C. Snowden, Davenport, recently elected delegate, are the only charter members still active in the society.

Another Speakers' Bureau.—The Omaha-Douglas County Medical Society has established a speakers' bureau to be conducted by the publicity committee, and has urged its members to register with the bureau and observe such rules as it may set up from time to time after they have been approved by the council. The society will hold blameless of charges of publicity and advertising such members as endeavor to instruct the public by lectures, demonstrations and radio talks or popular articles under the rules of the bureau. The resolution, establishing the bureau, recorded the society's disapproval of enterprises undertaken by organizations of any sort in which the interest of the public in health is exploited for gain and which seek the cooperation of the society or its members in conducting health propaganda as a return for professional services to persons able to pay for services.

NEW JERSEY

Society News.—Dr. Arthur A. Landsman, New York, addressed the Hudson County Physicians' Association, Jersey City, January 30, on "Bleeding from the Rectum."——Dr. Herbert Z. Giffin, associate professor of medicine, University of Minnesota Graduate School of Medicine, addressed the Atlantic County Medical Society, February 10, on "Splenectomy, Its Indications and Results."

Bills Introduced.—Senate bill 78 provides that the bills of pharmacists, for medicine furnished during the last sickness, against a decedent's estate shall have the same preference as bills of physicians and nurses. Senate bill 96 provides that nurses who were eligible for registration and who fail to make application within a period of two years, as provided by law, shall be allowed to make application for registration at any time within one year after the passage of the act.

NEW MEXICO

Loan Library.—The state department of health announces that its loan library has expanded to such an extent that it became necessary to catalogue it under the decimal system. It contains works of a technical and popular nature on almost every medical and public health topic of general interest. Any book in this collection is available to any responsible person in the state for loan, and a mimeographed list of the books is also available.

NEW YORK

Schools Closed to Check "Colds."—The New York *Times* noted, February 2, that the schools of Middleport had been closed in an effort to check an "epidemic of colds" which kept out of school 175 among 450 students. The malady was said to be the "influenza type of cold."

Bills Introduced.—House bill 426 would amend the Workmen's Compensation Act so as to allow an injured employee to recover, as part of the compensation provided by the act, all reasonable amounts expended by him for medical, surgical and hospital treatment. House bill 480 provides that the minimum penalty for the unlawful possession of narcotics shall be five years.

Personal.—Dr. Herman G. Wahlig, Sea Cliff, has been appointed pathologist to the North Country Community Hospital, Glen Cove, L. I.——Dr. Edward T. Wentworth, Rochester, was recently elected president of the New York Society of Industrial Medicine.——Dr. John H. Korns, for many years a medical missionary in China, has been appointed superintendent of the Cattaraugus County Sanatorium (Rocky Crest) at Olean, to succeed Dr. Charles W. Davis, who resigned to accept the superintendency of the Niagara County Sanatorium at Lockport. Dr. Reuben Wilson Shelley resigned the superintendency of the latter sanatorium to engage in private practice.——Dr. Winfield S. Bennett, for about ten years health officer of Patchogue, resigned in January, and his son, Dr. John W. Bennett, was appointed to serve the remainder of the term.

New York City

Kings County Sponsors Course for Boy Scouts.—The public health committee of the Medical Society of the County of Kings has arranged a first aid course for the senior boy scouts of Brooklyn to be given at the medical society offices, 1313 Bedford Avenue, every Saturday for ten weeks, beginning February 11. The course, which will be given by Dr. John J. Wittmer, will comprise such subjects as the relation of foods to health, anatomy and physiology of the body, elemental first aid, sprains, dislocations and fractures, bandages and relation of insects to health.

Lawyer Disbarred Through City Milk Investigation.—Attorney William H. Kehoe, formerly assistant corporation counsel who, the New York *Times* says, was found guilty in 1926 of a conspiracy to smuggle bootleg cream in the city and was sentenced to the penitentiary, was disbarred, January 13, by the appellate division. The presiding justice said in part that Kehoe, because of his long connection with the department of health, "had full knowledge of the gravity of the conspiracy to defy the law into which he was entering for a corrupt consideration." He described the conspiracy as one which affected, virtually, the health of the citizens in subjecting it to the risk of contamination from unauthorized sources, and said that an attorney who engages in such practices is unfit to remain a member of the legal profession.

Health Conference to Review Demonstrations.—The third New York Health Conference will be held at the Hotel Roosevelt, February 23-24, under the auspices of the New York State Medical Society, the Milbank Memorial Fund, the New York State Department of Health, the New York City Department of Health, the State Charities Aid Association, the Bellevue-Yorkville Community Health Council, and the U. S. Public Health Service. The advisory council of the Milbank Memorial Fund will meet in connection with the conference for a review of the health demonstrations in Cattaraugus County, the city of Syracuse and the Bellevue-Yorkville District, New York. The state committee on

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tuberculosis and public health of the State Charities Aid Association will hold its semiannual meeting at this time. The public is invited.

Neighborhood Health Centers to Be Established.—The New York Tuberculosis and Health Association will undertake the promotion of neighborhood health services and centers throughout the city, it was announced, January 31. A committee has been appointed to study health needs in special neighborhoods. It will study the organization of existing health centers, and with this data will advise and aid the formation of neighborhood department health services in other parts of the city. The director of the association, Harry L. Hopkins, says that this is the beginning of a definite plan to lay the foundation of a series of neighborhood department health organizations, each meeting the special needs of its constituents and working in harmony with the services provided by the department of health. The development of the many sided public activities in New York, he said, has been uncoordinated and for the most part without regard to the specific neighborhood requirements. The committee is to be composed of representatives of health centers and others interested in neighborhood health work.

Personal.—Dr. Philip Van Ingen has been elected secretary of the American Child Health Association.——Dr. Bertram Goldstein has been appointed electrocardiographer to St. Mark's Hospital and to Gouverneur Hospital.——Dr. Thomas Dwight Sloan, until recently assistant director in charge of Lakeside Hospital, Cleveland, has been appointed superintendent of the New York Post-Graduate Medical School and Hospital. From 1916 to 1921, Dr. Sloan was in charge at the University Hospital, Nanking, and after 1921 at the Peking Union Medical College Hospital as medical superintendent for about three years.——Homer Folks, LL.D., has completed his thirty-fifth year as secretary of the State Charities Aid Association.——Dr. James Herbert Lawson has been selected as surgeon for the American Olympic Team, sailing July 12 on the U. S. S. *President Roosevelt* for Europe.——Dr. Charles N. Dowd was elected commander of the Caduceus Post, American Legion, at the annual dinner, January 28.——Dr. Sigismund S. Goldwater has been appointed consulting expert for the erection of the new building of Kings County Hospital and improvement of the older structures.——Dr. Joseph R. Losee has been elected executive officer of the New York Polyclinic Medical School and Hospital to succeed the late Dr. James A. Kearney.

Hudson Towers Cancer Hospital Plan Abandoned.—The plan announced about a year ago to convert the uncompleted twenty-seven story Hudson Towers Building at Seventy-Seventh Street and West End Avenue, into a great cancer hospital at a cost of about $5,000,000 has been abandoned, the appeal to the public for funds having failed. Only a total of $116,705.41 was contributed, more than $53,000 of which was given by the directors of the New York Cancer Association, Inc., which backed the venture. All money contributed by the public will be returned to the donors, who number about 400. The failure of the project is a great disappointment to the physicians and laymen of the association. It was hailed, when announced, as a great step in the conquest of cancer. Accommodations were planned for 400 beds, mostly free; there was to be a clinic for 500 patients a day, research laboratories, and an assembly room open to the public where the treatment and prevention of cancer would be discussed; 6 Gm. of radium were to be purchased and about a million dollars was to be spent on equipment. Mr. Sanders A. Wertheim, president of the association, still hopes that some philanthropist or group will recognize the good that may be accomplished and come forward with the necessary aid. The present sponsors, he says, must acknowledge "their helpfulness to go ahead and are willing to hand the torch over to other hands" (THE JOURNAL, April 2, 1927).

Unusual Fellowships for Training Orthopedic Surgeons.—The president of the New York Orthopedic Dispensary and Hospital announced, January 30, that a gift of more than $1,000,000 from the estate of the late Mrs. John Innes Kane had been given to the institution as an endowment to found the Annie C. Kane fellowships. The income from the fund will provide eight fellowships of an annual value of from $4,000 to $9,000, which will be awarded to young surgeons of unusual ability who desire to specialize in orthopedics. The hospital trustees will award the fellowships for a period of three years or, in exceptional cases, five years, with the understanding that the fellow will devote his entire time to the work of the orthopedic hospital or to research. Dr. Russell A. Hibbs, chief surgeon, stated that this is a new departure, which it is hoped will have a beneficial effect on medical education in general. The gift was made with the understanding that the income be used solely to pay adequate salaries to selected young surgeons who show promise of development so that they may continue training in the hospital undisturbed by any consideration other than those pertaining directly to the care of the sick. The majority of the fellowships will probably be filled by specially qualified persons who have had internships at the orthopedic hospital, but some will be allotted to specially qualified surgeons who have been trained in other hospitals.

OKLAHOMA

Society News.—At the January meeting of the Oklahoma County Medical Society, Oklahoma City, Dr. John A. Hatchett gave an address on cardiac complications of pregnancy, and Dr. James G. Binkley on "Abruptio Placenta"; Dr. Arthur B. Chase, Oklahoma City, has been elected president of the society for 1928.——Dr. Willis K. West, Oklahoma City, recently addressed the Tulsa County Medical Society on "Deformities of the Lower Extremities," and Dr. Wann Langston, Oklahoma City, on "The Liver Function Test."

PENNSYLVANIA

Reading Moves Cemetery to Build Reservoir on Site.—Seven hundred bodies interred at the Friends Meeting House Cemetery in Reading are being removed under the supervision of the state health department, and a large impounding reservoir will be constructed on the cemetery site as part of a program for the improvement of the city's public water supply.

Dr. Heckel Honored.—The Pittsburgh Ophthalmological Society will give a testimonial dinner at the University Club, Pittsburgh, February 11, in honor of Dr. Edward B. Heckel, in recognition of his service to organized medicine and in celebration of his fifteenth consecutive year as president of the society. Dr. Heckel is chairman of the Board of Trustees of the American Medical Association. Following the dinner, a scientific meeting will be held at which Dr. Alfred Stengel, Philadelphia, will give an address on "Some Aspects of Cardiorenal Disease of Interest to Ophthalmologists and General Practitioners." The other guests of honor include Drs. George E. de Schweinitz, Philadelphia, formerly President of the American Medical Association; Dr. William S. Thayer, Baltimore, President-Elect of the American Medical Association; Dr. Arthur C. Morgan, Philadelphia, president of the state medical society; Drs. Thomas G. Simonton, Charles H. Henninger, Samuel R. Haythorn and Lyndon H. Landon of Pittsburgh, and the vice president of the society, Dr. Glendon E. Curry, who will preside at the dinner. Members of the Allegheny County Medical Society are invited to the scientific meeting.

Society News.—Dr. Elmer H. Funk, clinical professor of medicine and therapeutics, Jefferson Medical College, Philadelphia, addressed the annual meeting of the Lycoming County Medical Society, Williamsport, January 13, on "Diagnosis of Primary New Growths Within the Chest"; the ladies' auxiliary of the society raised approximately $1,000 during January toward a fund for refurnishing a ward in the Williamsport Hospital.——Dr. Jesse O. Arnold, clinical professor of obstetrics, Temple University School of Medicine, Philadelphia, addressed the February meeting of the Lancaster City and County Medical Society on "Some Recent Advancements in Practical Obstetrics."——Dr. John J. Gilbride, Philadelphia, addressed the Delaware County Medical Society, Chester, February 9, on "Diagnosis and Treatment of Gastric and Duodenal Ulcer."——Dr. Carson Coover, Harrisburg, gave the presidential address before the Dauphin County Medical Society, recently, on "The General Practitioner and the Orthopedic Point of View."——Dr. David Riesman, Philadelphia, will address the Harvard Academy of Medicine, February 21, on "The Disease Called Rheumatism"; Dr. Allen Z. Ritzman, Harrisburg, has been elected president of the academy for the ensuing year.

Philadelphia

Dr. Clark's Will.—The University of Pennsylvania eventually will receive most of the estate of the late Dr. John G. Clark, who was head of the gynecologic department. The Philadelphia *Public Ledger* says that Dr. Clark's estate amounted to $1,025,113.59. Dr. Clark willed $50,000 to the gynecologic department, provided for the endowment of a department of gynecology and clinical abdominal surgery in the university hospital and bequeathed $5,000 to pay for the expense of an annual lecture; all of his lantern slides were given to the gynecologic department. He provided trust

funds and life incomes for relatives and co-workers, and after the widow's death, one half of the principal of the trust fund reverts to the gynecologic department.

Society News—Symposium on Neurologic Surgery.—Dr. Charles H. Frazier and his co-workers in the department of neurologic surgery, University of Pennsylvania School of Medicine, will give a symposium on neurologic surgery before the Philadelphia County Medical Society, February 29; the subjects will be "Brain Tumors with Special Reference to the Surgical Aspects of Endotheliomas"; "Major Trigeminal Neuralgia; Recognition and Relief," and "Operable Tumors of the Spinal Cord." The women's auxiliary of the society will give an aid association benefit in the auditorium, February 28, comprising moving pictures, dancing and cards, to obtain funds for the incapacitated and more or less dependent members of the medical profession. Physicians and their wives, interns and friends are invited; subscription, $1. ——Dr. Frank C. J. Benson addressed the Medical Examiners' Association of Philadelphia, February 9, on "Early Recognition of Cancer."——Dr. Henry M. Thomas, Jr., associate in clinical medicine at Johns Hopkins School of Medicine, Baltimore, will address the Main Line Branch of the Montgomery County Medical Society, February 13, on "Medical Treatment of Hyperthyroidism."——A joint meeting of the New York Surgical Society and the Philadelphia Academy of Surgery was held, February 8, at the University of Pennsylvania Hospital.——Dr. Francis G. Blake, John Slade Ely professor of medicine, Yale University School of Medicine, New Haven, Conn., addressed the Philadelphia College of Physicians, February 1, on "Pathogenesis of Scarlet Fever and Erysipelas," and Dr. Thomas McCrae on "Organic Change and Disturbance of Function."——Dr. Jacques Forestier, Paris, France, addressed the Philadelphia Obstetrical Society, February 2, on "Diagnosis of Pelvic Conditions by Intra-Uterine Iodized Oil Injection."

SOUTH CAROLINA

Bill Introduced.—House bill 514 provides for the creation of a board of examiners in chiropractic and regulates the practice of chiropractic.

UTAH

Society News.—Dr. Foster J. Curtis addressed the Salt Lake County Medical Society, Salt Lake City, recently, on "Hysteria," and Dr. Alfred C. Callister on "Lung Surgery." The society voted, November 14, to increase its dues from $10 to $15.——Dr. George M. Fister, Ogden, addressed the Salt Lake County Medical Society, Salt Lake City, recently, on "A Few Red Blood Cells in the Urine," and Dr. Eugene H. Smith, Ogden, president of the state medical society, on "Rheumatic Heart Disease in Childhood"; at a special meeting of the society in December, Dr. Edgar L. Gilcreest, San Francisco, gave an address on "Sir William Osler, Physician and Philanthropist." The society recently gave a banquet to the local dentists which was followed by music and boxing bouts; Dr. Walter G. A. Schulte, retiring president, entertained the past presidents recently at a dinner in Salt Lake City.——Drs. Clarence Snow and Ralph T. Richards, Salt Lake City, recently addressed the Utah County Medical Society on medical and surgical aspects of goiter, and Dr. Barnet E. Bonar, Salt Lake City, on pneumonia in children.

VIRGINIA

University News.—The Medical College of Virginia, Richmond, laid the cornerstone of a new nurses' home, January 20, which will be known as "Cabaniss Hall" in honor of Sadie Heath Cabaniss, formerly superintendent of the Old Dominion Hospital. It will accommodate 134 persons and be connected by a tunnel with the Dooley and St. Philip hospitals and with the proposed new outpatient clinic.

Bills Introduced.—Senate bill 103 provides that the superintendent of a penitentiary may employ physicians in the several localities where the state convict road forest camps are located to attend prisoners who need medical care House T. N. 46 would amend the law relating to the disposition of dead bodies so as to provide that the officers of every public asylum for the insane shall notify the board as soon as such body comes into their possession and shall deliver such body on the order of said board to be used for the advancement of medical science.

Chiropractors Sidetracked Indefinitely.—After a three hour public hearing, the general laws committee of the House of Representatives of Virginia voted within five minutes, January 30, to pass by indefinitely the bill which would establish in Virginia a state board of chiropractic examiners. The committee voted 10 to 2 that it should not pass. Among those speaking against the measure were Drs. John Shelton Horsley, Lawrence T. Price, Ennion G. Williams, all of Richmond, and Hack U. Stephenson, of the state board of medical examiners. Dr. Stephenson said that no chiropractor had appeared before the state board for examination since Virginia recognized chiropractic in 1913.

WEST VIRGINIA

New Director of State Laboratory.—Elizabeth Parsons, D.Sc., Marietta, Ohio, assumed the duties of director of the state hygienic laboratory, February 2, succeeding Charles E. Gabel, Ph.D., whose term of service expired. Dr. Parsons, according to the *West Virginia Medical Journal*, is a graduate of Vassar College and of Johns Hopkins, where she has been associate professor of immunology.

Dr. Rutherford Honored.—The new tuberculosis sanatorium to be established at Beckley in southern West Virginia is to be named the Rutherford Sanatorium in honor of Dr. Albert G. Rutherford, superintendent of Welch Hospital number 1. Dr. Rutherford is secretary of the McDowell County Medical Society and has been active in the state medical society for years. He recently proposed that $200,000 of the funds available for the Welch Hospital be appropriated for the new sanatorium at Beckley.

Society News.—The Ohio County Medical Society, Wheeling, held a symposium on syphilis, January 6; the speakers were Drs. Arthur L. Jones, William M. Sheppe and Howard T. Phillips. Drs. Fielding O. Lewis, professor of laryngology, Jefferson Medical College, Philadelphia, and William S. Middleton, University of Wisconsin Medical School, Madison, Wis., addressed the society recently on "Laryngeal Cancer" and "The Management of Decompensation," respectively. ——Among others, Dr. Lewis L. McArthur, Chicago, addressed the annual meeting of the Central Tri-State Medical Society, Huntington, January 19, on "Conservative Surgical Treatment of Breast Tumors"; Dr. Louis Hamman, Baltimore, on "Prognosis of Hypertension," and Dr. Samuel Iglauer, Cincinnati, on "Use of Iodized Oil in Diagnosis of Chest Conditions."

GENERAL

American Board of Otolaryngology.—An examination will be held in Minneapolis, June 11, during the meeting of the American Medical Association, by the American Board of Otolaryngology. Persons wishing to submit applications for this examination are requested to communicate as soon as possible with the secretary, Dr. William P. Wherry, 1500 Medical Arts Building, Omaha.

New Medical Journal.—The *Hebrew Physician*, the only medical journal published in Hebrew outside of Palestine, has made its appearance under the editorship of Drs. Moses Einhorn and Asher Goldenstein, New York. There will be articles on general medical subjects, with a section devoted to new Hebrew medical terminology. All physicians interested are requested to communicate with the editorial office, addressing the *Hebrew Physician*, 286 West Eighty-Sixth Street, New York.

European Tour Postponed Until August.—The Travel Study Club of American Physicians has postponed the time of departure of its next party to enable members to attend the fifth International Congress on Industrial Accidents and Occupational Diseases to be held in Budapest, September 2-8, of which the president of the travel study club, Dr. Fred H. Albee, New York, is associate chairman for America. The American delegates to this congress and members of the travel study club will sail from New York, August 16, on the S. S. *Muenchen*, going to Berlin, Carlsbad, Budapest, Vienna, Munich, Bad Reichenhall, Milan, Nice, Barcelona, Madrid, Seville and Granada, and sailing from Gibraltar for home, September 28, on the S. S. *Conte Grande*.

The Oldest Medical Book Translated.—Prof. James Henry Breasted, University of Chicago, after six years' work has completed the translation of the Edwin Smith Papyrus, an Egyptian medical treatise of the seventeenth century before Christ. The translation will be published by the University of Chicago Press. According to the New York *Tribune*, the papyrus records, in tabulated form, the methods of treatment in vogue about 3,500 years ago in forty-eight different injuries. The cases tabulated commence with injuries to the top of the head and continue with injuries to the neck, shoulders and upper part of the chest, where the record is cut short in the middle of a sentence. It is one of the four most important

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medical works surviving from that ancient period, the others being the Papyrus Ebers in Leipzig, the Berlin Medical Papyrus and one at the University of California. The Smith papyrus, which is the most complete, is named after the American archeologist who discovered it at Thebes in 1862.

League of Nations to Hold Serologic Conference.—Reuben L. Kahn, D.Sc., immunologist, bureau of laboratories, Michigan Department of Health, has been invited by the health committee of the League of Nations to attend a serologic conference extending from May until July at Copenhagen, Denmark. The following serum reactions for syphilis will be considered at the conference: the Kahn, Sachs-Georgi, Meinicke, sigma and Vernes tests. It is planned to have the authors of these tests give discussions and demonstrations of their own methods. There will also be reported at the conference results of comparative studies with the different methods carried out by Dr. Harrison of the Health Ministry, London; Dr. Hirszfield of the State Health Institute, Warsaw; Dr. Otto of the Robert Koch Institute, Berlin, and others. The Kahn test is the standard method for the serum diagnosis of syphilis in the U. S. Navy, the state laboratories of Michigan, Illinois and West Virginia departments of health; in the Provincial Laboratory of Nova Scotia and in the city health department laboratories of Detroit, St. Louis and Memphis.

Government Services

Navy Personals

Lieut. John G. Smith has been ordered to attend a course of instruction at the University of California Medical School and Lieut. Comdr. John H. Chambers to attend a course at the Graduate School of Medicine of the University of Pennsylvania.——Lieut. (j. g.) Harold W. Gillen has tendered his resignation from the service.——Lieuts. (j. g.) George W. Cooper, Walter G. Kilbury and Clifton A. Young have been found qualified for promotion to the rank of lieutenant.——The surgeon general has recommended the transfer of Lieut. Comdr. Roger A. Nolan from the naval hospital, Parris Island, S. C., to the second brigade, U. S. Marines; the transfer of Lieut. Comdr. James E. Andrews from the naval hospital, Norfolk, Va., to the naval hospital, Parris Island, S. C.; the transfer of Lieut. Comdr. Guy B. McArthur from the pharmacists' mates school, Portsmouth, Va., to the naval hospital, Norfolk, Va., and the transfer of Lieut. Comdr. Paul T. Crosby from the naval medical school to the naval hospital, Washington, D. C.

Army Personals

On completion of their present tour of foreign service in the Philippine department, the following officers will be assigned to duty at the stations indicated: Lieut. Col. Earl H. Bruns to Fitzsimons General Hospital, Denver; Thomas L. Gore to Fort Sam Houston, Texas; Major Paul A. Schule to the army medical school, Washington, D. C.——Capt. Richard P. Smith has been relieved from duty at Fort Brady, Michigan, and ordered to Fort Sheridan, Ill., for duty.——Eight lieutenants of the medical corps have been relieved from duty at the Letterman General Hospital, Presidio of San Francisco, and will sail by transport about April 24 for New York City, then proceed to the Walter Reed General Hospital, Washington, D. C. They are Walter S. Jensen, William P. Holbrook, Rawley E. Chambers, Lester M. Dyke, Arthur J. Redland, John W. Rich, Edward H. Theis and Harold W. Glattly. The same instructions have been issued with regard to Lieut. Hervey B. Porter, now on duty at Fort McDowell, California.——Capt. Julius A. Johnson, on arrival from duty in the Philippine Islands, will proceed to Fort Bragg, North Carolina, for duty.——Major Ziba L. Henry was relieved from duty with the ninety-ninth division, Pittsburgh, and directed to proceed to Fort Dupont, Delaware, for duty; his name will be removed from the detached officers' list.——Major Roy L. Scott has been relieved from duty with the ninety-eighth division, Buffalo, N. Y., and ordered to Plattsburg Barracks, New York, for duty; his name will be removed from the detached officers' list.——Major Arthur N. Tasker was relieved from duty at Fort Humphreys, Virginia, and after temporary duty of about three months at the army medical school, Washington, D. C., in pursuance of a course of laboratory work, will sail from New York about April 20 for San Francisco, and then proceed to Fort Lewis, Washington, for duty.——Lieut. Loren D. Moore has been relieved from duty at Fort Benning, Georgia, and will sail from New York about March 1 for the Canal Zone for duty at Balboa Heights.——Lieut. Alvin L. Gorby has been relieved from duty at William Beaumont General Hospital, El Paso, and will sail from San Francisco about June 6 for the Canal Zone for duty at Balboa Heights.——Capt. Edwin R. Strong, who was excepted in war department orders from duty with troops, has been removed from the excepted list.——Major Albert H. Eber has been found incapacitated for active service on account of disability incident thereto, and such finding of a board having been approved by the President, Major Eber's retirement from active service under the provisions of section 1251, revised statutes, is announced.——Major George F. Lull has been relieved from duty at headquarters, eighth corps area, Fort Sam Houston, and assigned to the station hospital.——Capt. Seth A. McConnell has been assigned for duty at the general dispensary, U. S. Army, New York.——Capt. Adolphus A. McDaniel has been relieved from duty at Fort Barrancas, Florida, and assigned to duty at Fort Humphreys, Virginia.

Surgeon General Cumming Reappointed

President Coolidge sent to the Senate, January 27, the nomination of Dr. Hugh S. Cumming for reappointment as surgeon general of the U. S. Public Health Service and the Senate accorded the unusual honor of confirmation and approval on the same date the nomination was received in recognition of General Cumming's public service and record. He was originally appointed surgeon general in February, 1920, and his present term is for a period of four years, beginning March 10. Dr. Cumming is the fifth surgeon general of the U. S. Public Health Service. He was born in Virginia, Aug. 17, 1869, and entered the public health service as assistant surgeon in 1894, having gained, previous to his appointment as surgeon general, a most varied experience in public health work in various parts of this country and some foreign countries.

Veterans' Bureau Personals

The January *U. S. Veterans' Bureau Medical Bulletin* announces the following changes in medical personnel:

HOSPITALS

Dr. Samuel Ernest Attenberg, resigned at Northampton, Mass.
Dr. Theodore M. Barber, resigned at West Roxbury, Mass.
Dr. Nathan Barlow, transferred from Washington, D. C., to Jefferson Barracks, Mo.
Dr. William Cantrell, resigned at Washington, D. C.
Dr. Samuel K. Carson, reinstated at Palo Alto, Calif.
Dr. William A. Cashion, resigned at Waukesha, Wis.
Dr. William G. Cassels, transferred from central office, to Edward Hines, Jr., Hospital, Maywood, Ill.
Dr. Arthur G. Coumbe, transferred from Honolulu, T. H., to Fort Bayard, N. M.
Dr. William A. Ellison, transferred from Augusta, Ga., to Perry Point, Md.
Dr. Forrest M. Evans, resigned at Dwight, Ill.
Dr. Frank A. Fearney, transferred from Boston to Chillicothe, Ohio.
Dr. Thomas G. Foster, transferred from New York City to central office, Washington, D. C.
Dr. Leslie T. Gager, resigned at Bronx, N. Y.
Dr. George M. Gehringer, reinstated as pathologist at Fort Bayard, N. M.
Dr. Garland W. Hill, resigned at Tacoma, Wash.
Dr. Henry A. Hewins, appointed at Sheridan, Wyo.
Dr. Paul E. Johnson, resigned at Jefferson Barracks, Mo.
Dr. Walker D. Judkins, transferred from Fort Harrison, Montana, to Livermore, Calif.
Dr. John H. Kay, resigned at St. Cloud, Minn.
Dr. Arthur Lederer, resigned at Edward Hines, Jr., Hospital, Maywood, Ill.
Dr. Clinton G. Lyons, Jr., reinstated at Edward Hines, Jr., Hospital, Maywood, Ill.
Dr. Herbert L. Mains, resigned at Rutland Heights, Mass.
Dr. Lloyd M. Maurer, resigned at Washington, D. C.
Dr. Percy S. Rawls, resigned at Livermore, Calif.
Dr. Sancho P. Santos, resigned at Fort Snelling, Minnesota.
Dr. George W. Threlkeld, transferred from Kansas City regional office to Dwight, Ill.
Dr. Welcome B. Tilton, transferred from Kansas City regional office to Edward Hines, Jr., Hospital, Maywood, Ill.
Dr. Herbert C. Watts, transferred from San Francisco regional office to Fort Harrison, Montana.
Dr. Thomas A. Wayland, reinstated at Outwood, Ky.

REGIONAL OFFICES

Dr. Julian R. Blackman, resigned at Omaha.
Dr. Joseph C. Endler, transferred from New York City to Newark, N. J.
Dr. E. J. Gotthelf, resigned at Tucson, Ariz.
Dr. Jacob L. Pritchard, resigned at San Jose, Calif.
Dr. Edward R. Ryan, appointed at Milwaukee.
Dr. Fletcher G. Sanborn, transferred from Los Angeles to Honolulu, T. H.
Dr. Samuel E. Weiner, appointed as medical examiner at Atlantic City, N. J.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 21, 1928.

Indictment of the Dietary of Public Schools and Universities

At the annual conference of educational associations, held at University College, London, Mr. Charles E. Hecht, honorary secretary of the Joint Schools and Hospital Matrons' Committee of the Food Education Society, said that in one famous public school meat was given in excess and frequently appeared at supper. Sausage rolls, cold meat and galantine served to boys, some of whom soon afterward went to bed, made neither for good health nor for good morals. No effort was apparently made to promote mastication or to counteract errors of diet by water drinking apart from meals. Dr. Robert Hutchison had described the cooking at many public schools as shamefully bad and the serving extremely unattractive to boys brought up in more refined ways. The fat given was often insufficient, and there was a lack of green vegetables. Dr. Walter Kennedy, writing on diet in our public schools, declared that "parents would be amazed if they knew how often margarine was substituted for butter and how often separated milk was supplied. The dietary régime of the workhouse is often superior to that of the public schools. It may not be so appetizing but it is adjusted more accurately to the needs of the body. Again, the private soldier in the army is better fed than the average public school boy." Existing arrangements at public schools were in most cases bound up with the system of houses. The heads were expected to earn their means of retiring out of the profits of the houses. That was a direct incentive to economizing on food, too often at the expense of the children during the all important years of growth and adolescence. The food provided for students at the older and residential universities was in large measure unsuitable. It was conventional, deadly dull, and monotonous, ill balanced, unscientifically cooked, unappetizingly served, and indigestible. What made matters worse was that it was frequently gobbled up at breakneck speed, and perhaps followed, in the case of the midday meal, by football or other violent exercise. Those students who lived in rooms lacked means or knowledge of how to feed themselves, and were liable to fare even less favorably. Another aspect of institutional feeding centered round the midday meal provided for day students of universities, university colleges, and technical and other schools. Here the problem was complicated by the fact that many students were extremely poor. The governors and committees of hospitals, schools and other institutions needed to realize that the presence of an educated and highly trained woman in charge of the housekeeping and catering made not for extravagance but for efficiency and economy as well as for an all round improvement in the health of the residents. Such bodies should no longer be recruited from members of the male sex.

The chairman, Dr. Harry Campbell, an authority on dietetics and the most philosophical medical writer of the present day, said that it was of great importance to give children well baked, well buttered, crusty bread. Such food developed the jaw, and would do something toward making the British jaw a normal structure, which was not the case at the present time. Children could do very well without milk puddings. This was the only country in the world where pudding was served every day at meals. All the money spent on bacon and eggs should be spent on providing well baked crusty bread and a glass of cold milk, followed by fruit and salads.

The General Medical Council and the Dominions

At the twenty-sixth session of the general medical council, the president, Sir Donald MacAlister, in his address, said that the executive committee had had communications through the privy council from Quebec, Ontario and New Zealand which indicated a disposition in those parts of the empire to withdraw from physicians on the medical register the privileges of practicing within their prospective territories which had hitherto been accorded them in virtue of reciprocal agreements. The ground for the withdrawal seemed, generally speaking, to be a desire to protect certain local professional interests. If no modification of the views held by the provincial authorities on that subject could be brought about, the privy council would have to consider whether the privileges granted by this country to physicians from those British possessions now registerable on the colonial list of the register could be justly continued.

Heavy Damages Awarded Against a Surgeon for Volkmann's Contracture

At the Bristol assizes an action was brought against a surgeon for negligence and unskilled treatment. July 8, 1926, a girl, aged 8 years, fell from a donkey and fractured her left arm. She was taken to the surgeon and treated by him first at a nursing home and later in the Gloucester Infirmary. The arm became fixed at the elbow and Volkmann's contracture developed, resulting in permanent impairment of movement. The child was said to be very intelligent and a brilliant musician. She would now be unable to play effectively any musical instrument. A surgeon gave evidence that there was no voluntary movement of the wrist, fingers or thumb. She was suffering from fixation and contracture, which usually arose from tight bandaging or splint pressure. He agreed that the fracture, though of the simple type, was severe. A physician who was roentgenographer at the Bristol Infirmary said that roentgenograms of the child's arm showed that the fracture had not been reduced. An orthopedic surgeon said that without roentgenologic examination at the time it was possible for a competent surgeon to overlook the condition of nonreduction shown in the roentgenogram. In his evidence the defendant said that he was honorary surgeon to the Gloucester Infirmary and had been president of the Gloucestershire Branch of the British Medical Association. When he examined the child after the accident he found a fracture of the lower end of the humerus; the fragments were in bad position, the elbow was slightly swollen, and the ends of the bone were injuring the tissues. He manipulated the bones into position, after which a screen examination showed that the fragments were in alinement; he was satisfied that the fracture had been properly reduced. The arm was then suspended from the shoulder and a roentgenogram was taken. He viewed the case seriously from the first. The pulse and color of the hand were normal at that time, but the upper bony fragment almost protruded through the skin and threatened severe injury to other structures. Instructions were given that the circulation should be carefully watched. Next day the hand was a little swollen and the bandages were loosened. On the fourth or fifth day there was more discoloration, and he realized that the circulation was obstructed. The bandages were loosened and the strapping removed. Blisters were present, but these were kept sterile, and, while the child was under his care, no gangrene supervened. He suspected the possibility of Volkmann's contracture about July 11 or 12 and was certain of it by the third week of treatment. He told the mother that the child would be hopelessly paralyzed. He knew that the fracture was slightly overreduced, but he thought this advisable since it involved less interference with the blood vessels. Mr. Hey Groves of Bristol, professor of surgery, said that the roent-

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genogram showed severe fracture of the lower end of the humerus, with satisfactory reduction or overreduction; complete alinement was often impossible to obtain. When symptoms of Volkmann's contracture occurred it was much more important to restore the circulation than to maintain alinement. He thought that the surgeon had adopted the proper course in his treatment. Other evidence in support of the defendant was given by Dr. C. W. Knight, senior surgeon at Gloucester Infirmary; also by the matron of the nursing home, and a masseuse. The defendant's lawyer pointed out that he could not be said to have omitted any necessary step since he had made roentgenologic examinations in consultation with a skilled roentgenologist. It was admitted that distortions in roentgenograms were not infrequent and gave rise to errors of judgment. For the plaintiff it was maintained that it ought to have been realized from the roentgenogram that something was wrong, and further attempts should have been made to reduce the fracture more perfectly. The jury found for the plaintiff, the damages being assessed at $10,000 for the daughter and $750 for the mother. An appeal against the verdict is to be made.

Coercion of Parents as to Operation on a Child

A novel case came before the Brampton (Cumberland) magistrates. A farmer and his wife were summoned for neglecting their 9 year old child "in a manner likely to cause her unnecessary pain and suffering." The prosecution was at the instance of the National Society for the Prevention of Cruelty to Children. The neglect alleged was that they refused to allow an operation to be performed on the child for the removal of adenoids and tonsils, which, the prosecution asserted, were in a condition injurious to her health. There was no other allegation against the defendants; admittedly they were considerate of their child and provided her with a good home, and "intended to do right"; all that was laid against them was that they were "stupid" in not believing that an operation would benefit their daughter. Through their lawyer, they "most strenuously denied the insinuation that they had been neglecting their child in a manner likely to cause unnecessary suffering. Since February 7 of the past year the child had been in perfect health and had made perfect attendance at school, and she was not suffering in consequence of the tonsils." However, a local physician, who had been consulted, was of opinion that the child had enlarged tonsils but not adenoids, and the parents at last agreed to an operation being performed on the tonsils and to the removal of adenoids, if that was necessary, and the case was adjourned for a month. The law, it was stated, was clear that a failure to provide adequate medical aid was neglect within the meaning of the act, if unnecessary suffering was thereby inflicted on the child. In an editorial the Cumberland *News* regards the case as another proof of how steadily the liberty of the subject is being restricted: "If a parent is not permitted the determining voice in whether his child shall undergo an operation, in what is he entitled to liberty? So far as we can recall, regulation has lightened its hold on the parent in one direction only during the past few years. A citizen who refused to have his child vaccinated was formerly fined or sent to prison as a menace to the community; today he can satisfy the law by the mere signing of a form stating that he has a conscientious objection to vaccination. Thus, while a parent is held to be the determining authority whether inoculation is good or bad for his child, it would appear that he is denied a voice whether it is a fitting subject for a surgical operation." The leading Cumberland surgeon, Dr. H. A. Lediard, has published the following comment: "Whilst the prosecution was based on alleged neglect of the child's health, no thought was given to the parents' fear of their child's suffering under an operation, which might or might not be successful, and is at least attended with a risk of shock to a young and nervous child. Is not the N. S. P. C. C.," he asks, "overstepping the borders of its usefulness when, at the instance of the county medical authority, it allows itself to harass and coerce, through the magistracy, parents who are admittedly desirous for their child's welfare, but who do not accept the dictum of that authority as to what is best for the well being of the child?"

Electricity and Ultraviolet Rays on the Farm

In an address on "Electro-Farming, or Electricity in Agriculture," to the Rugby Engineering Society Mr. Borlase Matthews said that experiments in the use of electric light in poultry houses proved that it was possible to obtain an increase in the winter egg supply of from 10 to 50 per cent, while the use of electricity in the dairy had many advantages. One of the latest developments was the use of ultraviolet lamps for treating farm stock. As the result of experiments conducted by the Rowett Research Institute, at Aberdeen, it was now known that by treating cows in full milk with ultraviolet rays it was possible to reduce the loss of calcium and phosphorus from the body, and in some cases it was found that the loss could be converted into a gain. Several notable stables were treating their horses with ultraviolet rays, as it was considered that horses thus irradiated were brought into better condition during the winter racing season. Electricity was not yet within the reach of many farmers; but, if farmers were united, it would not be long before they obtained a supply. On a 150 acre farm it paid to put down a private generating plant if a public supply was not available.

PARIS

(From Our Regular Correspondent)

Jan. 10, 1928.

Recent Experiences with the Calmette Antituberculosis Vaccine

Before the Academy of Medicine, M. Calmette gave recently new statistical information on the results of the use of the B C G antituberculosis vaccine. His communication awakened great interest, and in appreciation of their services to humanity the government has bestowed on M. Calmette the highest rank of the Legion of Honor ("Grand Cross") and on his collaborator Dr. Guérin that of "Officer." Since July 1, 1924, the date on which the Pasteur Institute placed the B C G vaccine at the disposal of the physicians and public charity services, 52,772 children have been vaccinated at birth, in Paris and in the provinces. Among those vaccinated, 5,749, born of tuberculous mothers or brought up in a tuberculous familial environment, were controlled by the Pasteur Institute, which was provided with record cards for the registration of observations. Of the infants of the 0-12 months group, on Dec. 1, 1927, the 3,808 vaccinated presented an average mortality of 3.1 per cent, whereas the mortality of nonvaccinated children of the same age was 8.5 per cent. The general mortality has been reduced therefore more than 50 per cent. The deaths among children vaccinated and brought up in a tuberculous environment amounted to thirty-four, or 0.9 per cent for diseases presumed to be of tuberculous origin. Among nonvaccinated children living under the same conditions of contact with tuberculous persons, the mortality ranges from 24 per cent (children supervised by the dispensaries) to from 70 to 80 per cent. The country that has the lowest mortality for infants under 1 year of age, without vaccination, which is Denmark, presents a figure of 7.7 per cent. The statistics of children vaccinated who have now reached the age of 1 to 3½ years permit of observations of equal importance. Out of 1,941 such children, brought up in an environment of tuberculous persons and for whom record cards are on file at the Institut Pasteur, there have been

twenty-one deaths from all causes, only four of which were from diseases of presumably tuberculous origin (1.2 per cent), a figure lower than that of the average mortality of French children of the same age, not vaccinated, with or without a tuberculous environment, which is 1.6 per cent. The oldest child to succumb to a disease presumably tuberculous was 16 months old. Among the children vaccinated who have now reached the age of 2 to 3½ years, the tuberculosis mortality has been nil. Of the foregoing children, 298 have been subjected, since their first year, to a second vaccination, which had no effect whatever and therefore does not seem to be necessary. It was given at the request of the physicians and their families, and serves merely as added evidence. The great majority of the children were not subjected to this second vaccination, which proves that the first was sufficient. Furthermore, it can now be stated that the duration of the antituberculosis immunity thus obtained is longer than one could venture to affirm at first. In the monkeys vaccinated at the Pasteur Institute in Kindia, French Guinea, and kept in cages with tuberculous animals, the immunity has persisted for the past four years. In children vaccinated by Weill-Hallé and Turpin in 1921 and 1922, immunity has continued for five years. The B C G vaccine is administered by mouth. M. Calmette advises using the vaccine during the first ten days following birth, since at that time the epithelium of the intestine of the new-born can be more easily impregnated and allows the bacilli to pass that later are to find lodgment in all the organs. After the fifteenth day, the absorption of the bacilli is still possible but less likely to occur. M. Weill-Hallé used the vaccine in the form of punctures in children living in a tuberculous environment and who were presented to him after the lapse of fifteen days. The reaction was insignificant, and the results, up to the present time, have been just as favorable. Calmette reported also the important results of the B C G vaccination in the form of injections in adults, as observed in Norway at the Ulleval Hospital in Oslo by Heimbeck and Scheel. Of the pupils entering this hospital school, more than half did not react to tuberculin, showing thus that they had escaped, up to that time, all contamination. Tuberculosis found many victims during their stay in the school. It was suggested therefore that a subcutaneous vaccination with the B C G vaccine be tried. Of fifty-six pupils, forty-four accepted the suggestion and were vaccinated. None of the latter have since presented signs of tuberculosis, whereas such symptoms have been observed in those who did not consent to vaccination. It seems therefore legitimate to try to immunize with this vaccine subjects of any age whatever who appear healthy and free from any previous contamination. The Norwegian government is trying out this vaccine at present in one of the provinces of Norway. Calmette added that in his opinion nurses in hospitals and sanatoriums should be the first to take advantage of this prophylactic method.

Ceremonies Held in Strasbourg in Honor of Koeberlé

At the Gaujot Hospital, Strasbourg, patriotic delegations with waving banners dedicated, in the presence of the military and civil authorities, a plaque commemorative of the "carabins rouges," and, at the Place du Chateau, a second plaque commemorative of the erection of the old Ecole du service de santé militaire, which was suppressed during the period of German control. In the afternoon, the Faculté de médecine celebrated the centenary of the eminent French surgeon Eugene Koeberlé of Strasbourg (1828-1915), and dedicated likewise the new otorhinolaryngologic clinic. After an address by Professor Weiss, dean of the Faculté de médecine, Professor Stolz (surgery) eulogized Eugene Koeberlé as a physician, surgeon, inventor, artist, poet and modeler, and paid homage to his zeal, his professional labors, his scientific knowledge, and his respect for human life.

MEXICO CITY

From a Special Correspondent)

Jan. 1, 1928.

Eighth Mexican Medical Congress

The national medical congress held at Monterey, Nuevo León, Dec. 5-10, 1927, was the eighth of this character. As the president of the organizing committee, Dr. F. Castillo Nájera, is abroad on a diplomatic mission, it was resolved that Dr. Ulises Valdés, the president of the Mexican Medical Association, should assume charge of the arrangements. The association will likewise organize all future congresses.

The delegates included representatives from practically every scientific institution in Mexico, medical schools and hospitals as well as the National Academy of Medicine, the department of industry and commerce, postoffice and public works, and even the governments of several states. The public welfare board of the federal district sent a number of lecturers to describe its work, with the aid of films. The Mexico City Medical School, the Army Medical School and Monterey Medical School exhibited some work done by their students.

The official delegate sent by the American Medical Association was Dr. J. O. McReynolds. Other American physicians who attended were Dr. E. A. Blount, Dr. A. Wallace, Dr. W. E. Howard and Dr. Schofield.

The Monterey congress was a complete success. The surroundings, with the combination at Monterey of modern progress and traditional customs, added to the inducements. The local authorities and physicians also did everything in their power to make the members comfortable. The most striking note in evidence at the meeting was the tendency of Mexican physicians to submit papers based on their own experience.

The official subjects for discussion were: medicine, aortitis in Mexico; surgery, treatment of "acute abdominal conditions"; obstetrics, dystocias with a cervical origin; public health, provision of potable waters. The first subject, aortitis, was set forth by Dr. I. Chávez, and discussed by Drs. F. Ocaranza and A. Arreguín. Dr. Chávez brought out the considerable prevalence of syphilitic aortitis in Mexico. Dr. G. Maida spoke on the "acute abdominal syndrome." This subject has received of late much attention from Mexican surgeons. In discussing water supplies, Mr. M. A. de Quevedo stated that it was next to impossible to get a glass of safe water in Mexico under present conditions.

A number of other papers were read: on Hodgkin's disease and lymphosarcoma by Dr. M. Pallares; on Mexican mycoses by Dr. Gonzáles Guzman; on sequels of epidemic encephalitis by Dr. L. Salazar Viniegra. Dr. M. de la Torre Morali called attention to the presence of typhus and Malta fever on both sides of the Rio Grande, and Dr. L. de J. Lozano identified with paratyphoid an endemic disease on the banks of Chapala Lake.

Dr. Ulises Valdés and his co-workers submitted *en masse* the work from their clinic on pancreatitis; spinal anesthesia in the treatment of ileus; cancer; the leukocyte count, and ovarian cysts.

In the ophthalmology section, Dr. J. O. McReynolds, the American delegate, read a very thorough study of the crystalline lens. Dr. R. Silva described surgical treatment of subretinal bladder-worms. Dr. J. Larumbe explained that Mexican onchocerciasis is not as amenable to treatment as the Guatemalan variety.

In its resolutions, the congress approved the organization of a congress on obstetrics and gynecology, the creation of a cancer institute, and the organization of a national federation of physicians. The next meeting will be held at Guadalajara at a date to be specified later.

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GENEVA

(From Our Regular Correspondent)

Jan. 16, 1928.

BCG Vaccine

The preventive treatment of tuberculosis in the new-born by the Calmette-Guérin method was recently discussed at the Geneva Medical Society. Dr. A. Cramer stated that the numerous previous attempts to prevent tuberculosis with serums, vaccines and other procedures had been uncertain in results or were failures. Calmette's vaccine is given by mouth to infants, and large scale experiments had given conclusive results. It is harmless for both animals and infants. The infant must be vaccinated during the first days of life and again at the end of the first and third years. The vaccination becomes effective only after three weeks, and during this time the subject must be closely watched. Dr. Cramer proposed that the medical society establish propaganda for its more frequent use.

Dr. Montandon thought that a family physician should advise an obstetrician or a maternity hospital in cases in which this vaccination should be done. He also thought that this vaccination should be a matter of routine, just as vaccination against smallpox since there are many instances of concealed tuberculosis among parents which endanger their offspring.

Dr. Liegme stated that Calmette's vaccine was virulent, but that the virulence was attenuated. Professor Askanazy had performed a necropsy on a 3 weeks old infant who had been vaccinated. In this case there was no evidence of virulence.

Dr. Guillermin remarked that Calmette's vaccine was harmless and effective, at least in early infancy. Yet he thought that judgment should be reserved concerning the duration of immunity in these infants.

Swiss Antituberculosis Association

At a meeting of the Swiss Antituberculosis Association, Dr. Cevey made some remarks on tuberculosis in country children. While studying the nutrition of country children, he was surprised that of primary school children in two villages only 31.7 per cent had a normal nutrition index; 36.5 per cent presented subnutrition. In 31.8 per cent, subnutrition was marked. Cevey believes that Swiss peasants do not feed their children rationally. At the time of his address he had just cared for fifty children sent from various dispensaries in the north of France, of whom only 6 per cent offered a satisfactory state of nutrition. All were infected with tuberculosis and besides the usual localization around the hilum more than 33 per cent showed pleural or pulmonary manifestations.

Contrary to what is generally supposed, subnutrition does not precede the tuberculosis but occurs as a consequence of the infection.

International Bureau of Hygiene

The International Bureau of Hygiene, in its report for 1927, referred to the malarial treatment of general paralysis. In the United States, treatment with malaria seemed to be favored. In Holland, where generally malarial inoculation is made by subcutaneous injection of infected human blood, the results, although not absolutely unvarying, are in general favorable. Yet serious accidents have occurred, requiring prudence. In England, infection by bites of infected mosquitoes seems to be preferred. Vaccination reports from various parts of Italy tend to show that usually where malaria is prevalent general paralysis is uncommon. Similar testimony has been received from Turkey.

From data received relating to the epidemiology and prophylaxis of scarlet fever, attention is called to the control in force in the United States respecting the production of toxin and antitoxin. The epidemic of scarlet fever after the war in Serbia, which attained its maximum in 1921, has been decreasing. Experimental work at the Hospital for Infectious Disease at Dairen show that reactions similar to Dicks' have been obtained with staphylococci grown from scarlet fever patients.

Kala-azar in Greece seems to attack children under the age of 14 years in mountainous regions. Injections of sodium arsanilate and arsphenamine have not given results that are favorable.

As to anticancer work in the United States, Italy and the Dutch Indies, it seems that in all the tropical races all known types of neoplasm are quite as common as in Europe.

MADRID

(From Our Regular Correspondent)

Dec. 22, 1927.

Medical Week

La Medicina Ibera organized the first medical week held in Madrid. It proved a success. Lectures and demonstrations were given as usual and there was no lack of banquets, receptions and the never absent excursions to Toledo and El Escorial. In the inaugural sessions, all the foreign delegates spoke in their mother tongue, with the exception of the American delegate, Dr. Rudolph Matas of New Orleans, who chose Spanish as his medium of expression, as a tribute to his ancestors. He was also the one to receive most applause on recalling that the Charité Hospital founded by the Spaniard Don Andrés Almenáster still stands at New Orleans.

Beckers of Brussels spoke on the topic "Gynecology Must be Above All a Medical Science." He advised Besredka's local vaccine therapy in metritis, and local and general vaccines treatment in salpingitis. Autogenous vaccines seem to him of little use. In rebellious cases, protein therapy should be added.

Dr. Sheehan of New York gave a lecture illustrated with slides on the correction of facial defects.

Professor Forgue of Montpellier discussed sternomastoid excresis in the removal of large growths in the neck.

PHYSIOLOGY OF THE THYROID GLAND

One of the most striking lectures was by Dr. Gley, president of the Paris Academy of Medicine, on the physiologic rôle of the thyroid gland. He reviewed developments since Gley himself found iodine in the venous blood of the gland, and Baumann in active thyroid substance. A question is raised by the possibility that the action of the thyroid may be due to one or more factors, the proportion of which varies at different periods of life. The administration of thyroid extract excites some cells but proves inert in other areas. Must a certain receptive substance be present so that the thyroid may exert its action? Finally Gley mused on the phenomenon of old age. The thyroid gland does not exhibit any structural difference as age advances. Some animals, as fishes and snakes, grow indefinitely until some accident puts an end to their lives. Is it possible that in the higher animals the receptive substance disappears after a certain period, thus preventing further growth?

Goiter in Spain

Dr. Marañón opened the sessions of the Medical and Surgical Society with an address on goiter in Spain. Perhaps the most remarkable part of the lecture was its wealth of illustrations taken from old and recent paintings by famous artists. Marañón stressed the fact that it is as unscientific nowadays to place endemic goiter among thyroid diseases as pellagra among skin disturbances. In goiter areas, cancer of the thyroid is not as common in Spain as in Switzerland.

In the Madrid cancer registry, among 1,142 growths of all kinds, seventeen were in the thyroid and only three of these were malignant. Dr. Goyanes, the director of the cancer institute, has seen only six and Marañón only three cases of thyroid cancer. Perhaps the only national trait of goiter in Spain is its mildness. Thus in Madrid, a nongoitrous town, there was hyperthyroidism in 51 per cent of seventy-two cases, while in Asturias, a goitrous region, only 28 per cent of fourteen patients presented hyperthyroidism. Goiter is present everywhere, but causative conditions seem to assume a more intensive and persistent character in some countries. The problem there is apparently one concerning culture. Dr. Marañón has just been invited to become a member of a board at Bordeaux University, France, which will pass on a geographic thesis relating to the most typical goiter region in Spain, Las Hurdes. After completing this task, he will leave for Havana, where he has been invited to deliver a number of lectures as a special guest of the Cuban government.

Spanish League of Mental Hygiene

The Spanish Association of Neuropsychiatrists suggested in 1926 the organization of a league of mental hygiene. A few days later the league held its first session and Dr. S. Ramón Cajal was elected president. The chairman, Dr. V. Cortezo, read the message sent by Dr. Murillo, the director general of public health. Dr. Murillo pointed out that insane persons throughout the ages have received worse treatment than any other patients. It seems almost incredible that, while the brain is the noblest organ in the body, its diseases should have been those most neglected. This situation is improving gradually in Spain. The present government has placed in its deficiency budget an item of 1,000,000 pesetas (about $170,000) for a school of psychiatry, and the secretary of the interior has transferred from his funds 500,000 pesetas ($85,000) more for the same purpose.

BERLIN

(From Our Regular Correspondent)

Jan. 7, 1928.

The Physicians of Germany in 1927

Utilizing the material of the most recent list of German physicians as contained in the Reichsmedizinalkalender (the only list that is now published) by Prof. J. Schwalbe, Sanitätsrat Prinzing of Ulm, the medical statistician, has an article in the *Deutsche medizinische Wochenschrift* on the physicians of Germany in 1927.

The number of physicians in Germany in 1927 (exclusive of the Saar region) was 47,338. Placing the population of Germany for the middle of the year 1927 at 63,500,000, there were, then, 7.45 physicians to each 10,000 inhabitants. A comparison with earlier years is given in the adjoining tabulation. From these figures, it will be seen that there has been an increase of physicians, since the war, exceeding all expectations, for in 1927 there are almost three thousand more physicians listed than in 1926. As a result of the delayed graduations caused by the war, and, still more, as a consequence of the greatly increased attendance at the medical schools, the number of medical students during the first few years after the war was exceedingly large. The increased attendance had doubtless various causes: the lowering of the admission requirements on account of the disturbed condition of instruction in the schools during the absence of the teachers engaged in various war services; admiration for the glorious accomplishments of the physicians during the war; the fact that the opportunities for becoming an army officer are greatly reduced, and the large number of women students, which has doubled since the war. From 1923 on, up to the winter semester 1925-1926, the total number of medical students decreased, doubtless in consequence of the restricted number of physicians admitted to the panel of the *krankenkassen;* but in the summer semester of 1926 a reaction in the other direction set in.

Physicians in Germany

	Former German Reich			Present-Day Germany (Exclusive of the Saar Region)	
	Total No. of Physicians	No. of Physicians per 10,000 Inhabitants		Total No. of Physicians	No. of Physicians per 10,000 Inhabitants
1901	27,098	4.92	1921	36,186	5.99
1905	30,655	5.98	1925	41,650	6.67
1911	32,835	5.02	1926	44,356	7.10
1913	34,136	5.11	1927	47,338	7.45

The number of licenses to practice medicine granted, on the average, in one year for the periods cited was as follows:

1900-1905	1,217	
1905-1910	823	
1910-1913	1,342	
1913-1914	3,882	
1915-1918	849	
1918-1920	2,593	
1920-1921	2,224	
1921-1922	2,337	
1922-1923	3,062	
1923-1924	2,618	
1924-1925	2,433	
1925-1926	2,067	

The figure for 1913-1914 includes the 2,250 emergency licenses granted at the beginning of the war.

In the forty-three larger cities of Germany (exclusive of Saarbrücken) there were 21,385 physicians; in these cities, the number of physicians per 10,000 inhabitants is shown in the adjoined tabulation for certain selected years beginning with 1906.

No. of Physicians	1906	1910	1913	1925	1927
In the larger cities	10.0	9.9	9.6	11.2	12.5
In remaining Germany	3.9	3.7	3.8	5.0	5.6

The increase in the larger cities amounts therefore, since 1906, to only 25 per cent, but in remaining Germany it equals 43 per cent.

The increase in the various states of Germany has been fairly uniform, even in those states and provinces with a small urban population.

The number of women physicians in 1927 shows a considerable increase over 1926. In 1913 the total number of women physicians in Germany was 195. The totals for 1926 and 1927 were 1,627 and 2,078, respectively. They constitute at present 4.4 per cent of the medical profession. Of the women physicians, 1,665 were independent, while 413 were assistants or connected with voluntary organizations. Their distribution according to the size of the city is shown in the following tabulation:

	1926	1927
Greater Berlin	314	392
Other cities above 100,000 population	565	654
Cities with from 5,000 to 100,000 population	384	470
Communes with less than 5,000 population	134	149

Of the 149 physicians resident in communes with less than 5,000 population, sixty-nine have married physicians.

Marriages

ABRAHAM BARR SNIVELY, Waynesboro, Pa., to DR. FLORENCE M. GOTTSHALL of Philadelphia, January 7.

JOHN SOLOMON MCDAVID, Oak Park, Ill., to Miss Dorotha Belle Kelly of Los Angeles, Dec. 27, 1927.

FRANK S. KITSON to Miss Verna Ulrey, both of North Manchester, Ind., Dec. 15, 1927.

ALBERT JAY BONER, Chicago, to Miss Ethel Levitan of Madison, Wis., Dec. 6, 1927.

JOHN E. EKSTROM to Miss Sybil Olson, both of Chicago, in October, 1927.

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Deaths

Truman William Brophy ✠ for many years dean and professor of oral surgery, Chicago College of Dental Surgery, died, February 4, at the Lutheran Hospital, Los Angeles, of bronchopneumonia, aged 79. Born in Illinois, Dr. Brophy graduated from the Pennsylvania College of Dental Surgery in 1872 and from Rush Medical College in 1880, at which time he was made professor of dental pathology and surgery. He was formerly president of the Chicago Dental Society and the Illinois State Dental Society, and in 1882-1883 was secretary of the Section on Dental and Oral Surgery of the American Medical Association. Dr. Brophy was president of the United States section of the thirteenth International Medical Congress in Madrid in 1903, and for many years president of the International Dental Federation; he received the Miller Prize of the federation in 1925. He was an officer of public instruction in France in 1913 and was made an officer of the Legion of Honor in 1924. Dr. Brophy was oral surgeon to the Frances Willard and Michael Reese hospitals, Chicago, was the author of "Oral Surgery," and "Cleft Palate and Cleft Lip," and was a member of many scientific societies in this country and abroad.

James Beaty Eagleson ✠ Seattle; College of Physicians and Surgeons, Chicago, 1885; member of the Western Surgical Association; past president of the Washington State Medical Association and the Kings County Medical Society; past president of the Washington State Board of Health, and State Board of Medical Examiners; on the staffs of the Seattle General, Children's Orthopedic, Minor, and Providence hospitals; formerly connected with the U. S. Public Health Service; served during the World War; business editor of *Northwest Medicine* since its origin in 1901; aged 65; died, January 26.

Benjamin Tenney ✠ Boston; Harvard University Medical School, Boston, 1892; member of the American Urological Association; at one time instructor in anatomy at his alma mater and instructor in surgery, Tufts College Medical School, Boston; formerly on the staffs of the Boston City Hospital and the Boston Dispensary; aged 62; died, January 18, of carcinoma of the prostate.

Joseph John Sinnott, Mount Vernon, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1903; member of the Medical Society of the State of New York; served during the World War; chief of the surgical staff of the Mount Vernon Hospital; consulting surgeon to St. Agnes Hospital, White Plains; aged 46; died, January 26, of sarcoma.

John Cooke Olmsted, Rhinebeck, N. Y.; University of Virginia Department of Medicine, Charlottesville, 1876; formerly professor of clinical medicine, Atlanta College of Physicians and Surgeons, and professor of medicine and clinical medicine, Atlanta Medical College; at one time on the staff of the Grady Hospital; aged 76; died, January 6.

William Schauffler Dodd, New York; Medical Department of Columbia College, New York, 1886; served with the American Red Cross during the World War; medical secretary of the Near East Relief; aged 67; died suddenly, January 24, at his home in Bloomfield, N. J., of heart disease.

William Amos Johnson, Wake Forest, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1925; professor of anatomy, Wake Forest College School of Medicine; aged 25; died, Nov. 26, 1927, at the Rutherford Hospital, Rutherfordton, of injuries received in an automobile accident.

Julien Welsch Russell, Brooklyn; Long Island College Hospital, Brooklyn, 1895; member of the Medical Society of the State of New York; also a dentist; on the staffs of the Kings County, Methodist Episcopal and Coney Island hospitals; aged 66; died, January 23, of cerebral hemorrhage.

Harold Burney Eaton ✠ Boston; Harvard University Medical School, Boston, 1915; member of the American Psychiatric Association and the New England Society of Psychiatry; served during the World War; aged 41; died, January 18, of a gunshot wound, presumably self-inflicted.

Frederick Joseph Adams, Bridgeport, Conn.; Medical Department of the University of the City of New York, 1895; member of the Connecticut State Medical Society; served during the World War; connected with the U. S. Veterans' Bureau; aged 59; died suddenly, Dec. 30, 1927.

Edwin Hiram Hackett, Massena, N. Y.; University of Vermont College of Medicine, Burlington, 1884; member of the Medical Society of the State of New York; for twenty-five years health officer of Massena; aged 65; was found dead in bed, January 4, of chronic endocarditis.

Richard Thomas Pollard, Garrett, Pa.; Baltimore Medical College, 1891; also a druggist and a minister; formerly member of the school board and the board of health; aged 79; died, January 5, at the Hazel McGilvery Hospital, Meyersdale, of diabetes mellitus.

James Joseph O'Keefe, St. Louis; St. Louis College of Physicians and Surgeons, 1903; member of the Missouri State Medical Association; served during the World War; aged 52; died, January 14, of hypernephroma with metastasis in the lungs.

George W. Palmer, Chelsea, Mich.; University of Michigan Medical School, Ann Arbor, 1877; treasurer of the school board; aged 73; died, January 14, at the University Hospital, Ann Arbor, of a skull fracture received in an automobile accident.

Stephen Squire Green, Niagara Falls, N. Y.; Medical Department of the University of the City of New York, 1864; member of the Medical Society of the State of New York; Civil War veteran; aged 89; died, January 15, of angina pectoris.

William Franklin Shick, East Orange, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1888; formerly on the staff of the Hospital for Women and Children, Newark; aged 63; died, January 19, of angina pectoris.

William Edwards, San Francisco; College of Physicians and Surgeons of San Francisco, 1897; member of the California Medical Association; aged 61; died, January 18, at the French Hospital, of cardiorenal disease and influenza.

William Hale Clewley ✠ Boston; Boston University School of Medicine, 1919; served during the World War; on the staff of the Massachusetts Homeopathic Hospital; aged 33; died, January 14, at his home in Woburn, of appendicitis.

Arthur W. Scidmore, Three Rivers, Mich.; University of Michigan Medical School, Ann Arbor, 1890; formerly mayor; served during the World War; aged 60; died in January, at Kalamazoo, of chronic diffuse meningo-encephalitis.

Charles V. Scott ✠ Little Rock, Ark.; University of Arkansas School of Medicine, Little Rock, 1904; on the staffs of the General and Baptist hospitals and St. Vincent's Infirmary; aged 60; died, January 8, of chronic myocarditis.

Francis Marion McRee, Union City, Tenn.; Vanderbilt University School of Medicine, Nashville, 1879; Confederate veteran; formerly member of the legislature; aged 84; died, January 5, of chronic myocarditis and nephritis.

Leo Fabian Bradley, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1908; member of the Medical Society of the State of Pennsylvania; aged 46; died, January 4, of pericarditis and arteriosclerosis.

William Thomas Graves, Paducah, Ky.; University of Louisville School of Medicine, 1882; formerly health officer of Paducah; aged 68; died, January 17, at the Riverside Hospital, of chronic interstitial nephritis.

Charles Eastwick Smith, St. Paul; University of Pennsylvania School of Medicine, Philadelphia, 1865; formerly on the staff of St. Joseph's Hospital; aged 84; died, January 10, of senile dementia and arteriosclerosis.

John Wesley Crooks, Seattle; Western Pennsylvania Medical College, Pittsburgh, 1900; member of the Washington State Medical Association; aged 52; died, January 6, at the Providence Hospital, of pneumonia.

Samuel Schwalbe, St. Louis; University of Maryland School of Medicine, Baltimore, 1885; aged 69; died, January 22, in Chicago, of bronchopneumonia, following chronic myocarditis and hypertension.

William F. Peairs, Sutersville, Pa.; College of Physicians and Surgeons, Baltimore, 1892; member of the Medical Society of the State of Pennsylvania; aged 62; died, Nov. 20, 1927, of cerebral hemorrhage.

Ben Carlos Frazier ✠ Louisville, Ky.; University of Louisville School of Medicine, 1894; aged 63; died, January 11, at St. Joseph's Infirmary, following an operation for hypertrophy of the prostate.

John Linton Harkness, Eaton Rapids, Mich.; Jefferson Medical College of Philadelphia, 1901; formerly health officer of Eaton Rapids; aged 51; died, January 11, of injuries received in a fall.

Frank Wister Thomas ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1880; served dur-

ing the World War; aged 69; died, January 19, of carcinoma of the esophagus.

Linton Smith, Wilmington, Del.; University of Pennsylvania School of Medicine, Philadelphia, 1866; Civil War veteran; aged 84; died, Oct. 20, 1927, of arteriosclerosis and chronic bronchitis.

Walter Byrne, Russellville, Ky.; Bellevue Hospital Medical College, New York, 1879; member of the Kentucky State Medical Association; aged 72; died suddenly, January 7, of angina pectoris.

Robert H. McMullin, Leitchfield, Ky.; Kentucky School of Medicine, Louisville, 1891; member of the Kentucky State Medical Association; aged 67; died, January 11, of ulcerative colitis.

Robert Daniel Snyder, Cleveland; University of Cincinnati College of Medicine, 1927; aged 27; resident physician at the City Hospital where he died, January 16, of lobar pneumonia.

Edwin Johnson Elderkin, Weymouth, N. S., Canada; McGill University Faculty of Medicine, Montreal, Que., Canada, 1884; L.R.C.P., Edinburgh, Scotland, 1889; died, Oct. 23, 1927.

Robert D. Miller, Clinton, Miss.; Kentucky School of Medicine, Louisville, 1879; aged 79; died, Nov. 11, 1927, at the home of his daughter in Jackson, of diabetes mellitus.

Benajah Butucher Powell ✠ Moorestown, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1897; aged 59; died suddenly, January 13, of heart disease.

Abram Theodore Aronsohn, Baltimore; University of Wooster Medical Department, Cleveland, 1876; aged 79; died, January 14, at San Francisco, of arteriosclerosis.

Herman G. Franzen ✠ Minneapolis; Northwestern University Medical School, Chicago, 1905; aged 55; died, January 16, at the New Ashbury Hospital, of cholelithiasis.

William Spencer Brown ✠ Denver; Denver College of Medicine, 1896; aged 64; died, Nov. 24, 1927, at St. Luke's Hospital, of carcinoma of the pancreas.

Thomas A. Swift, Abbottsford, B. C., Canada; McGill University Faculty of Medicine, Montreal, Que., 1906; aged 47; died, October 24, of cerebral embolism.

Frederick Curwen Leas, Wayne, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1904; aged 55; died, January 11, of carcinoma of the liver.

James Franklin Tomlin, Mount Zion, Ky.; Kentucky School of Medicine, Louisville, 1881; aged 69; died, January 5, of nephritis and aortic regurgitation.

Harold Shier Churchill, Winnipeg, Man., Canada; University of Manitoba Faculty of Medicine, Winnipeg, 1924; aged 33; died in October, 1927.

William A. McFarlane, Redlands, Calif.; Long Island College Hospital, Brooklyn, 1878; aged 76; died, Dec. 17, 1927, of carcinoma of the intestine.

Daniel Thomas Price, Booneville, Miss.; Jefferson Medical College of Philadelphia, 1866; aged 88; died, January 6, of injuries received in a fall.

Harrison Darling Jenks ✠ Detroit; Harvard University Medical School, Boston, 1894; aged 60; died suddenly, January 11, of heart disease.

Newton B. Shands, Wewoka, Okla.; University of Louisville (Ky.) School of Medicine, 1882; aged 70; died, January 13, of diphtheria.

Joseph Henry McGovern, Lenzburg, Ill.; Rush Medical College, Chicago, 1897; deputy coroner; aged 59; died, January 13, of nephritis.

George N. Whittier, Holdrege, Neb.; Hahnemann Medical College and Hospital, Chicago, 1888; aged 70; died, January 11, of nephritis.

Isaac Oppenheimer, New York; Medical Department of Columbia College, New York, 1876; aged 72; died, January 10, of heart disease.

Joseph Frederick Gobbel, Birdseye, Ind.; Kentucky School of Medicine, Louisville, 1902; aged 51; died, January 15, of pneumonia.

John Nellis Daly ✠ Freeport, Ill.; Rush Medical College, Chicago, 1895; aged 57; died, January 15, at a local hospital, of uremia.

Louis Julian Chedel, Egypt, Ga.; Maryland Medical College, Baltimore, 1904; aged 45; died, January 15, of heart disease.

John M. Phillips, Boulder, Colo.; Kansas City (Mo.) Medical College, 1881; aged 75; died, January 14, of asthma.

Louis Lowenthal, Chicago; Chicago Homeopathic Medical College, 1879; aged 89; died, January 11, of senility.

Bureau of Investigation

ASTHMA-SERA

Another Iodide-Containing Asthma and Hay Fever Nostrum

"Asthma-Sera Ends Asthma and Hay Fever Forever." The statement just quoted does not, of course, appear on the trade packages of "Asthma-Sera," for trade packages of "patent medicine" are subject to the control of the Federal Food and Drugs Act and false and fraudulent statements appearing on them are likely to bring reprisals from the government in the form of prosecution. The statement, however, does appear, so far as we have been able to tell, on every sheet of stationery sent out by the R. M. B. Laboratories, Seattle, Washington, the concern that exploits Asthma-Sera. The newspaper advertising varies in its degrees of positiveness, such variations doubtless being due to differences in advertising standards. The prospective purchaser is told:

"Don't experiment with injections, inhalants, serums or narcotics of different kinds because they cannot remove the cause. Only Asthma-Sera, which is an internal medicine, can overcome your trouble PERMANENTLY, and until you send for your treatment you may never know the peace and comfort of restful nights and pleasant days *entirely free* from these dreadful maladies."

Testimonials, of course, are much in evidence, practically all from laymen. One, however, was sent out in 1922, purporting to be from a physician. In 1925, the doctor died of heart disease.

Asthma-Sera comes in six-ounce bottles and, according to the R. M. B. Laboratories, four bottles "is considered a full treatment"; price $10.50. The person who sends in $10.50

for the four bottles is told that, if any symptoms of asthma remain after he has finished the first half of the fourth bottle, he "should order two more bottles of Asthma-Sera *immediately.*"

A complete treatment of four bottles was turned over to the A. M. A. Chemical Laboratory, with the request that it be analyzed. The Laboratory report follows:

LABORATORY REPORT

"Four original bottles of Asthma-Sera (R. M. B. Laboratories, Inc., Seattle, Washington) were submitted to the A. M. A. Chemical Laboratory for examination. The only statement referring to composition was:

> Asthma-Sera contains no morphine, cocaine, opium or other habit forming drugs. Alcohol less than 3 per cent.

"Each bottle contained approximately 180 cc. (6 fluid ounces) of a brown liquid with suspended material. The liquid was neutral to litmus paper; the preparation had an odor of sarsaparilla. Qualitative tests indicated the presence of strontium, sodium, iodide, emodin, alcohol and traces of iron and aluminum. Chloride, bromide, arsenic and alkaloids were not found. Quantitative determinations yielded the following:

"Specific gravity (at 25 C.)	1.091
"Solids	12.86 per cent
"Sulphated Ash	5.3 per cent
"Sodium (Na^+)	0.10 per cent
"Strontium (Sr^{++})	2.26 per cent
"Iodide (I^-)	6.90 per cent

"From the foregoing, it may be concluded that Asthma-Sera is essentially a solution containing 8.8 per cent strontium iodide (SrI_2), 0.43 per cent sodium iodide (NaI), and an emodin-bearing (laxative) drug. The dosage, according to the directions on the bottle, was one teaspoonful four times daily. From the figures just given, this indicates that each teaspoonful of Asthma-Sera is the equivalent of:

Strontium iodide	5.9 grains
Sodium iodide	0.3 grain
Laxative drug.	

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"This means that the daily dose (four teaspoonfuls) is equivalent to 1.52 Gm. (23.6 grains) strontium iodide (SrI_2), and 0.072 Gm. (1.16 grains) sodium iodide (NaI), with the laxative."

The same old fake; iodides and a laxative! That iodides will be effective in certain forms of asthma is, of course, well known to every physician. Strontium iodide has no advantage over sodium or potassium iodide, and, while used to some extent some years ago, has long since been abandoned in the light of experimental and clinical experience. Yet the exploiters of Asthma-Sera sell their product under the claim that it is a new treatment discovered by a French physician and never before used in Canada or the United States in the combination found! When the public's money can be extracted so easily is it any wonder that mail-order quackery has a lure?

JOY BEANS QUACK JAILED

Readers of this department of THE JOURNAL may remember that on July 16, 1927, there was published a brief article dealing with the issuance of a fraud-order against a quack, one Frank Beland of Cairo, Ill. Beland exploited a piece of aphrodisiac quackery under such trade names as "Joy Beans Laboratories" and "Beland Laboratories," selling a preparation that he called "Joy Beans." According to the government report, Joy Beans were put up by Eli Lilly and Company, Beland himself having no medical, pharmaceutic or chemical training.

In his advertising literature, Beland, who is 60 years old, had claimed that, when he was 23 years old, he had a paralytic stroke and that Joy Beans had cured him. He asserted that he could run a foot race and that his medicine had brought back to him his youthful days, both sexually and physically. He described himself in his literature as looking as young today as when he was 25 years old. It was obvious at Beland's trial that these claims were false and, in fact, Beland's own attorney in his argument referred to him as an "old man." The government's case was presented by the District Attorney, Mr Harold G. Baker, who deserves special commendation for the way in which the matter was handled. Judge Fred L. Wham, after pointing out to Beland the serious nature of his offense, imposed a jail sentence of ninety days.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE ERYTHROCYTE SEDIMENTATION TEST

To the Editor:—I will thank you very much if you will give me the technic for the blood sedimentation test.

C. W. CURLIN, M.D., Hickman, Ky.

ANSWER.—The following is the technic of the sedimentation test as used in the Long Island College Hospital, in the service of Dr. John O. Polak.

MATERIAL REQUIRED

1. Sedimentation tube (Linzenmeier).
   Standard calibrated tube.
2. Tuberculin syringe, 1 cc., calibrated in 0.1 cc.
3. Hypodermic needle, three-fourths inch, 23 gage.
4. Five per cent sterilized sodium citrate solution fresh every two weeks.
5. Tourniquet for venipuncture.

TECHNIC

Draw 0.2 cc. of the 5 per cent sodium citrate solution into a tuberculin syringe.

Puncture a vein and draw into the syringe sufficient blood to make 1 cc. of the mixture, making a solution of 0.2 cc. of citrate and 0.8 cc. of blood.

Invert the syringe once so that the citrate and blood are thoroughly mixed and thus avoid clotting.

With the needle still attached to the syringe, inject this mixture slowly against the side of the sedimentation tube, thus avoiding air in the tube.

Invert the tube once so that the citrate and blood are thoroughly mixed.

Record the time, as, for example, 3:30 p. m. Record the second reading when the column of blood cells settles from serum and reaches the 18 mm. mark on the sedimentation tube, as, for example, 4:30 p. m. The sedimentation time is, therefore, sixty-one minutes. If the blood clots, the reading should not be used. Never remove the needle from the syringe until the blood has been placed in the sedimentation tube.

The tubes may be obtained from the C. A. Ingram Company, 3484 Cass Avenue, Detroit.

DRUGS APPLIED THROUGH THE SKIN

To the Editor:—Is there any therapeutic basis for the application of drugs to the skin for internal effect? If so, what are the drugs that may be used in this manner?

XAVIER CORSO, M.D., Beaver Dam, Wis.

ANSWER.—Certain drugs are absorbed by the skin, others not. The best way perhaps of learning what drugs are likely to be absorbed is to understand the principles governing absorption through the skin:

Nonvolatile substances are not absorbed from aqueous solution. Such substances can be absorbed when applied to the skin in a fatty medium and with considerable friction. Bodies soluble in fat or fat solvents penetrate the skin more readily than water soluble substances. There is not great absorption, however, unless the substance is volatile. Still, such bodies as cantharidin penetrate the skin sufficiently not only to affect the skin itself, as is evidenced by blistering in case of cantharidin, but also to produce systemic action, as the liability to nephritis with cantharidin.

Volatile substances are much more readily absorbed through the skin and the degree of their absorbability is probably proportional to their volatility. Thus, guaiacol is so readily absorbed as to be capable of producing antipyretic action. As is well known, metallic mercury is sufficiently well absorbed when applied by inunction in ointment form to give satisfactory systemic action. Calomel, on the other hand, which was tried because of its cleanliness when rubbed into the skin, gave only a poor degree of absorption.

PRESERVATION OF FOOD

To the Editor:—At present the general public seems to be greatly interested in food preservation. We see articles on every hand stating that foods must be kept at temperatures under 50 F. if they are to be kept from spoiling or decaying. We also read that decay is caused by molds, yeast and bacteria, but no one seems to be able to enlighten us as to what would happen if we should eat this food that is decayed. I wonder whether you have any information or can give me any references on the following subjects: 1. What body disorders or diseases are caused by eating decayed meat, vegetables, fruits and sea foods? 2. Cooking mold or bacteria infested food tends to kill the micro-organisms, but will the eating of such food after it is cooked have any ill effect on the human system? 3. Is the common mold which grows on apple sauce, bread and fruits injurious to the system when unknowingly eaten? 4. Is there any authoritative information backing up statements which often appear in syndicated articles and magazines that "anywhere from 50 to 90 per cent of the ailments of mankind are caused by eating foods that in some way are infested with bacteria or mold?" 5. Have you any positive information as to what percentage of sickness is caused by eating bacteria or mold infested food? 6. Do cold temperatures have any effect on germs that cause sickness?

E. J. HUBER, Dayton, Ohio.

ANSWER.—There are many methods for the preservation of food, among which the most universally used in the home is preservation by cold. There is no doubt that proper refrigeration in the home will protect food from spoilage, most of which is caused by the action of bacteria. Distinction should be made between simply *decayed* foods, and *contaminated* foods which may not even be decayed.

1. The eating of decayed foods apparently may cause some discomfort from an esthetic standpoint. However, food poisoning is not produced unless the food is contaminated with organisms, such as the paratyphoid-enteritidis group, which are known to be the causative factor in food poisoning outbreaks. It is curious to note that when food is contaminated with this group of bacteria, spoilage rarely results.

2. Food that is properly and thoroughly cooked throughout will destroy any of the bacteria of the paratyphoid-enteritidis group and the toxin of *B. botulinus*, thereby rendering it ordinarily safe. There must be taken into consideration, however, the possibility of toxic but sterile products, such as has been reported by the British authorities, the theory being

that contamination reached the contents before sterilization and there being present in the sterile product a heat-stable poisonous substance.

3. There is no evidence that the common mold causes any illness when ingested by human beings as indicated in this question.

4. No.

5. Reliable facts concerning the prevalence of food poisoning due to bacteria in the United States are difficult to obtain, since the disease is rarely made reportable. An article on the subject appeared in THE JOURNAL, Oct. 13, 1923, pages 1275 to 1282. Further material will be found in this issue, page 459.

6. Yes; low temperatures will inhibit the growth of bacteria, but ordinarily do not destroy them.

ABSORPTION OF FLUIDS FROM GASTRO-INTESTINAL TRACT

To the Editor:—We are at variance as to the opinion of physiologists as to where the greatest amount of fluids was absorbed in the gastro-intestinal tract. I will appreciate it if you will send me whatever excerpts you have on this matter or what authorities I might consult in regard to it.

STANLEY M. GATES, M.D., Monticello, Ark.

ANSWER.—Water can be absorbed from any part of the alimentary tract. However, when water is taken on an empty stomach it remains in the stomach for such a short time that practically none of it is absorbed in that viscus. If one isolates segments of the small intestine and introduces water into such segments, it is found that water is absorbed at all levels of the small intestines. But since the water content of the chyme is practically as great at the ileocecal valve as in the duodenum, it has been erroneously assumed by some physiologists that the small intestine absorbs little of the water taken with or during a meal. When it is recalled that a large quantity of watery secretions (bile, pancreatic juice, succus entericus) is added to the intestinal contents during digestion of a meal, and, secondly, that in a healthy person from 90 to 95 per cent of the digestible food materials have already passed into the blood by the time the chyme passes the ileocecal valve, it is clear that a large quantity of the water taken with a meal must be actually absorbed in the small intestine. Except under conditions of diarrhea, colitis and the like, the liquid chyme in the large bowel is concentrated to the ordinary consistency of the feces. This means very active absorption of water in the large bowel. There is little or no secretion of water into the large bowel except under pathologic conditions of the mucosa of this viscus. When water is taken on an empty stomach and an empty small intestine, it is probable that most of this water is absorbed in the small intestine itself, and that very little water thus taken enters the large bowel.

IODIDES IN TUBERCULOSIS

To the Editor:—What is the best modern thought concerning the use of iodides in a patient with pulmonary tuberculosis? Would the use of iodides be advisable in a patient with active chronic pulmonary tuberculosis and tertiary syphilis (history and positive Wassermann reaction) without signs or symptoms of gummatous lesions? Please omit name.

M.D., South Dakota.

ANSWER.—Iodides have been used in the treatment of tuberculosis of the lungs, to a considerable extent, these last few years. Where there seems to be good reason, iodine or the iodides may be used for other conditions in the presence of pulmonary tuberculosis. It has been used to promote a freer expectoration, without any untoward results. It seems reasonable to resort to it in the treatment of such a serious complication of pulmonary tuberculosis as syphilis.

GOAT'S MILK

Dr. W. Warner Watkins of Phoenix, Ariz., calls attention to data which should have been included in the answer to the query entitled "Goat's Milk" (THE JOURNAL, January 21, pp. 224 and 225).

An article by Drs. Watkins and Lake, entitled "Malta Fever," was published in THE JOURNAL, Nov. 5, 1927, p. 1581, giving an account of an epidemic definitely connected with the sale and use of goat's milk, in which both the human victims and the goats were examined by the United States Public Health Service and in which the statement was made that Malta fever is endemic in the goat raising district of the Southwest and should be constantly guarded against, and that the sale of raw goat's milk should be prohibited. The connection between goats and Malta fever in the southwestern United States was established by Gentry and Farenbaugh in articles under the general title "Endemic Malta Fever in Texas," which appeared in THE JOURNAL, Sept. 9, 1911, p. 889; Sept. 23, 1911, p. 1045, and Sept. 30, 1911, p. 1127.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.

CALIFORNIA: Los Angeles, Feb. 27. Sec., Dr. Charles B. Pinkham, 623 State Bldg., San Francisco.

COLORADO: Denver, April 3. Sec., Dr. Philip Work, 324 Metropolitan Bldg., Denver.

CONNECTICUT: Hartford, March 13-14. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Bd., New Haven, March 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, April 10. Sec., Dr. Edgar P. Copeland, Suite 110, 1801 Eye St., Washington.

IDAHO: Boise, April 3. Commissioner of Law Enforcement, Hon. F. E. Lukens, Boise.

ILLINOIS: Chicago, April 10-12. Supt. of Reg., Mr. V. C. Michels, Springfield.

KANSAS: Topeka, Feb. 14. Sec., Dr. Albert S. Ross, Sabetha.

MAINE: Portland, March 13-14. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, March 13-15. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

MINNESOTA: Minneapolis, April 17-19. Sec., Reg. Bd., Dr. A. E. Comstock, 524 Lowry Bldg., St. Paul. Basic Science examinations, April 3. Sec., Basic Science Bd., Dr. E. T. Bell, U. of Minnesota, Minneapolis.

MONTANA: Helena, April 3-5. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NATIONAL BOARD OF MEDICAL EXAMINERS: Class A Medical Schools, Feb. 15-17. Dir., Dr. Everett S. Elwood, 1600 Walnut St., Philadelphia.

NEW HAMPSHIRE: Concord, March 8. Sec., Dr. Charles Duncan, Concord.

NEW MEXICO: Santa Fe, April 9-10. Sec., Dr. Wm. T. Joyner, Roswell.

OKLAHOMA: Oklahoma City, March 13-14. Sec. Dr. J. M. Byrum, Shawnee.

PHILIPPINE ISLANDS: Manila, Feb. 14. Sec., Dr. José V. Gloria, 686 Ave. Rizel, Manila.

PORTO RICO: San Juan, March 6. Sec., Dr. Diego A. Biascoechea, 3 Allen St., San Juan.

RHODE ISLAND: Providence, April 5-6. Sec., Dr. B. U. Richards, State House, Providence.

VERMONT: Burlington, Feb. 21-23. Sec., Dr. W. Scott Nay, Underhill.

WISCONSIN: Madison, March 17. Sec., Basic Science Bd., Prof. M. F. Guyer, U. of Wisconsin.

Minnesota October Examination

Dr. A. E. Comstock, secretary of the Minnesota State Board of Medical Examiners, reports the written examination held at Minneapolis, Oct. 18, 1927. The examination covered 14 subjects and included 60 questions. An average of 75 per cent was required to pass. Seventeen candidates were examined, all of whom passed. Eight candidates were licensed by reciprocity and 4 were licensed by endorsement of their credentials. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
Rush Medical College	(1926)	93.2
Indiana University School of Medicine	(1926)	88.3
State University of Iowa College of Medicine	(1926)	89.3
Harvard University Medical School	(1925)	92.6
University of Minnesota Medical School	(1927)	89.5,* 92.1*
St. Louis University School of Medicine	(1927)	85.6
Creighton University School of Medicine	(1924)	94.3
Cornell University Medical College	(1924)	93.2
Syracuse University College of Medicine	(1913)	88
University of Oregon Medical School	(1920)	94.1
Jefferson Medical College of Philadelphia	(1922)	88.1
University of Pennsylvania School of Med.	(1925) 92.5; (1926)	91.4
University of Manitoba Faculty of Medicine	(1926)	91.2
University of Toronto Faculty of Medicine	(1922)	94.5
University of Voronezh, Russia	(1918)†	83.3

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Los Angeles	(1921)	California
Rush Medical College	(1926)	Wisconsin
University of Illinois College of Medicine	(1926)	Illinois
Harvard University Medical School	(1922)	Wisconsin
University of Michigan Medical School	(1905)	Indiana
University of Nebraska College of Medicine	(1921), (1922)	Nebraska
Medical College of Virginia	(1922)	Virginia

ENDORSEMENT OF CREDENTIALS		
College	Year Grad.	Endorsement with
Northwestern University Medical School	(1926)	N. B. M. Ex.
University of Pennsylvania School of Med.	(1924), (1925,2)	N. B. M. Ex.

* This candidate will receive his M.D. degree on the completion of one year's internship in a hospital.

† Verification of graduation in process.

Missouri October Examination

Dr. James Stewart, secretary of the State Board of Health of Missouri, reports the written examination held at Kansas City, Oct. 25-26, 1927. The examination covered 14 subjects

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and included 103 questions. An average of 75 per cent was required to pass. Eighteen candidates were examined, all of whom passed. The following colleges were represented:

College	Year Grad.	Number Passed
PASSED		
Northwestern University Medical School	(1927)	1
University of Kansas School of Medicine	(1927)	1
St. Louis University School of Medicine	(1926), (1927, 2)	3
Washington University School of Medicine	(1926), (1927, 5)	6
Creighton University School of Medicine	(1924)	1
University of Oklahoma School of Medicine	(1927)	1
Jefferson Medical College of Philadelphia	(1927)	1
University of Pennsylvania School of Medicine	(1927)	1
University of Tennessee College of Medicine	(1926), (1927)	2
University of Vienna, Austria	(1910) *	1

* Verification of graduation in process.

Medical Economics

THE PHYSICIAN'S INCOME TAX—1928

The taxpayer who is required to make a return must do so on or before March 15, unless an extension of time for filing the return has been granted. For cause shown, the collector of internal revenue for the district in which the taxpayer files his return may grant such an extension, on application filed with him by the taxpayer. This application must contain a full recital of the causes for the delay. Failure to make a return may subject the taxpayer to a penalty of 25 per cent of the amount of the tax due.

The normal rate of tax on individual citizens or residents of the United States, under the Revenue Act of 1926, is 1.5 per cent on the first $4,000 of net income in excess of the exemptions and credits, 3 per cent on the next $4,000, and 5 per cent on the remainder.

WHO MUST FILE RETURNS

1. Returns must be filed by every person having a *gross* income of $5,000 or more, regardless of the amount of his net income or his marital status. If the aggregate gross income of husband and wife, living together, was $5,000 or more, they must file a joint return or separate returns, regardless of the amounts of their joint or individual net incomes.

2. If *gross* income was less than $5,000, returns must be filed (*a*) by every unmarried person, and by every person married but not living with husband or wife, whose *net* income was $1,500 or more, and (*b*) by every married person, living with husband or wife, whose *net* income was $3,500 or more. If the aggregate net income of husband and wife, living together, was $3,500 or more, each may make a return or both unite in a joint return.

If the marital status of a taxpayer changed during the tax year, the amount of income necessary to bring him within the class required to make returns should be ascertained by inquiry of the local collector of internal revenue.

As a matter of courtesy only, blanks for returns are sent to taxpayers by the collectors of internal revenue, without request. Failure to receive a blank does not excuse any one from making a return; the taxpayer should obtain one from the local collector of internal revenue.

The following discussion covers matters relating specifically to the physician. Full information concerning questions of general interest may be obtained from the official return blank or from the collectors of internal revenue.

GROSS AND NET INCOMES: WHAT THEY ARE

Gross Income.—A physician's gross income is the total amount of money received by him during the year from professional work, regardless of the time when the services were rendered for which the money was paid, plus such money as he has received as profits from investments and speculation, and as compensation and profits from other sources.

Net Income.—Certain professional expenses and the expenses of carrying on any enterprise in which the physician may be engaged for gain may be subtracted as "deductions" from the gross income, to determine the net income on which the tax is to be paid. An "exemption" is allowed, the amount depending on the taxpayer's marital status during the tax year, as stated above. These matters are fully covered in the instructions on the tax return blanks.

Earned Income.—In view of the credit of 25 per cent allowed on *earned* net income, the physician should state accurately the amount of such income as distinguished from his receipts from other sources. *Earned* income means professional fees, salaries and wages received as compensation for personal services rendered. From this, in the computation of the tax, must be subtracted certain "earned income deductions." The difference is the "earned net income."

The first $5,000 of an individual's net income from all sources may be claimed, without proof, to be *earned* net income, whether it was or was not in fact *earned* within the meaning set forth in the preceding paragraph. Net income in excess of $5,000 may be claimed as *earned* if it in fact comes within that category. However, a taxpayer may not claim, as *earned*, net income in excess of $20,000.

The conditions relating to the computation of the tax on earned income are too elaborate to be stated here. In case of doubt, physicians should consult collectors of internal revenue.

DEDUCTIONS FOR PROFESSIONAL EXPENSES

A physician is entitled to deduct all current expenses necessary in carrying on his practice. The following statement shows what such deductible expenses are and how they are to be computed:

Office Rent.—Office rent is deductible. If a physician rents an office for professional purposes alone, the entire rent may be deducted. If he rents a building or apartment for use as a residence as well as for office purposes, he may deduct a part of the rental fairly proportionate to the amount of space used for professional purposes. If the physician occasionally sees a patient in his dwelling house or apartment, he may not, however, deduct any part of the rent of such house or apartment as professional expense; to entitle him to such a deduction he must have an office there, with regular office hours. If a physician owns the building in which his office is located, he cannot charge himself with "rent" and deduct the amount so charged.

Office Maintenance.—Expenditures for office maintenance, as for heating, lighting, telephone service and the services of attendants, are deductible.

Supplies.—Payments for supplies for professional use are deductible. Supplies may be fairly described as articles consumed in the using; for instance, dressings, clinical thermometers, drugs and chemicals. Professional journals may be classified as supplies, and the subscription price deducted. Amounts currently expended for books, furniture and professional instruments and equipment, "the useful life of which is short," may be deducted; but if such articles have a more or less permanent value, their purchase price is a capital expenditure and is not deductible.

Equipment.—Equipment comprises property of more or less permanent value. It may ultimately be used up, deteriorate or become obsolete, but it is not in the ordinary sense of the word "consumed in the using"; rather, it wears out.

Payments for equipment or nonexpendable property for professional use cannot be deducted. As property of this class may be named automobiles, office furniture, medical, surgical and laboratory equipment of permanent value, and instruments and appliances constituting a part of the physician's professional outfit and to be used over a considerable

period of time. Books of more or less permanent value are regarded as equipment, and the purchase price is therefore not deductible.

Although payments for equipment or nonexpendable articles cannot be deducted, yet from year to year there may be charged off against them reasonable amounts as depreciation. The amounts so charged off should be sufficient only to cover the lessened value of such property through obsolescence, ordinary wear and tear, or accidental injury. If improvement to offset obsolescence and wear and tear or injury has been made, and deduction for the cost claimed elsewhere in the return, claim should not be made for depreciation.

A hard and fast rule cannot be laid down as to the amount deductible each year as depreciation. Everything depends on the nature and extent of the property and on the use to which it is put. Five per cent a year has been suggested as a fair amount for depreciation on an ordinary medical library. Depreciation on an automobile would obviously be much greater. The proper allowance for depreciation of any property is that amount which should be set aside for the tax year in accordance with a reasonably consistent plan, not necessarily at a uniform rate, whereby the aggregate of the amounts so set aside, plus the salvage value, will at the end of the useful life of the property in the business equal the purchase price of the property or, if purchased before March, 1913, its estimated value as of that date or its original cost, whichever may be the greater. The physician must in good faith use his best judgment and make such allowance for depreciation as the facts justify. Physicians who, from year to year, claim deductions for depreciation on nonexpendable property will do well to make annual inventories, as of January 1, each year.

Medical Dues.—Dues paid to societies of a strictly professional character are deductible. Dues paid to social organizations, even though their membership is limited to physicians, are personal expenses and not deductible.

Postgraduate Study.—The Commissioner of Internal Revenue holds that the expense of postgraduate study is not deductible.

Traveling Expenses.—Traveling expenses necessary for professional visits to patients are deductible. The Commissioner of Internal Revenue, however, still holds that traveling expenses incident to attendance at meetings of medical societies are merely personal expenses and therefore not deductible. Physicians who have expended money for traveling expenses to attend meetings of medical societies should not make a deduction for the amount so expended, in computing their income taxes under current schedules. They are advised, however, either to make a memorandum on their income tax returns or to file a memorandum with them, showing in detail the amount so expended. Such a memorandum should show that payment of the tax on that amount has been demanded by the Commissioner of Internal Revenue and is made solely by reason of that demand, under protest and under duress. The physician filing such a memorandum should retain a copy of it. In event of any reversal of the commissioner's ruling, physicians who have made such records can more easily substantiate their claims for repayment. A physician who deducts traveling expenses or the expenses of postgraduate study must expect to have such deduction disallowed. He will then be compelled to pay the tax on the disallowance, with interest, or to appeal to the Board of Tax Appeals and possibly to the courts. If he appeals, he will in the end have to abide by the result.

AUTOMOBILES

Payment for an automobile is a payment for permanent equipment, and is not deductible. The cost of operation and repair, and loss through depreciation, are deductible. The cost of operation and repair includes the cost of gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician), chauffeurs' wages, etc.

Deductible loss through depreciation is the actual diminution in value resulting from obsolescence and use, and from accidental injury against which the physician is not insured. If depreciation is computed on the basis of the average loss during a series of years, the series must extend over the entire estimated life of the car, not merely over the period in which the car is in the possession of the present taxpayer.

If the automobile is used for professional and also for personal purposes—as when used by the physician for recreation, or used by his family—only so much of the expense as arises out of the use for professional purposes may be deducted. A physician doing an exclusive office practice and using his car merely to go to and from his office cannot deduct depreciation or operating expenses; he is regarded as using his car for his personal convenience and not as a means of gaining a livelihood.

What has been said with respect to automobiles applies with equal force to horses and vehicles and the equipment incident to their use.

MISCELLANEOUS

Laboratory Expenses.—The deductibility of the expenses of establishing and maintaining laboratories is determined by the same principles that determine the deductibility of other corresponding professional expenses. Laboratory rental and the expenses of laboratory equipment and supplies and of laboratory assistants are deductible when under corresponding circumstances they would be deductible if they related to a physician's office.

Losses by Fire, etc.—Loss of and damage to a physician's equipment by fire, theft or other cause, not compensated by insurance or otherwise recoverable, may be computed as a business expense, and is deductible, provided evidence of such loss or damage can be produced. Such loss or damage is deductible, however, only to the extent it has not been made good by repair and the cost of repair claimed as a deduction.

Insurance Premiums.—Premiums paid for insurance against professional losses are deductible. This includes insurance against damages for alleged malpractice, against liability for injuries by a physician's automobile while in use for professional purposes, and against loss from theft of professional equipment, and damage to or loss of professional equipment by fire or otherwise. Under professional equipment is to be included any automobile belonging to the physician and used for strictly professional purposes.

Expense in Defending Malpractice Suits.—Expenses incurred in the defense of a suit for malpractice are deductible as business expense. Expenses incurred in the defense of a criminal action, however, are not deductible.

Sale of Spectacles.—Oculists who furnish spectacles, etc., may charge as income money received from such sales and deduct as an expense the cost of the article sold. Entries on the physician's account books should in such cases show charges for services separate and apart from charges for spectacles, etc.

Laboratory Research and Clinical Medicine.—What is needed most of all is that the research student in the laboratory should get into closer touch with the realities of clinical medicine, because any cleavage between the laboratory worker and the general practitioner impoverishes both. There is no life in the ordinary textbook on laboratory methods. The doctor in the country finds little use for tests he cannot readily apply at the bedside of his patient. The clinician can never be replaced by the laboratory worker. Each is complementary to the other; each has much to give and much to gain.—Ramsay, A. M.: *Brit. M. J.* **2**:1216 (Dec. 31) 1927.

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Book Notices

THE ENDOCRINES IN GENERAL MEDICINE. By W. Langdon Brown, M.A., M.D., F.R.C.P., Physician to St. Bartholomew's Hospital. Cloth. Price, $3. Pp. 144. New York: Paul B. Hoeber, Inc., 1927.

This monograph on the endocrine glands is, according to the preface, chiefly a record of the author's personal experience. Besides the usual chapters, the author provides a prophecy in a chapter called "The Future of Endocrines." The thymus and pineal gland are discussed under the heading "the retarding glands." The monograph is easy reading but its chief merit is its brevity. It is to be regretted that so much unproved theory, speculation, disproved assertions and out and out nonsense should be offered as an aid to the practitioner in medicine who really needs guidance in this difficult field.

The following quotations justify this criticism: As evidence of the physiologic effects of feeding the anterior lobe of the pituitary, the author cites the following "old woman's tale":

> Mr. Crossley-Meates has kindly informed me that he gave 2 grains of anterior lobe extract daily to an Irish wolfhound bitch pup of four months old. In a month the facial expression became heavy and the ears large, so that it resembled a bloodhound. The long bones were definitely larger and heavier than those of the rest of the litter. But the most striking difference was the change in character, for this bitch pup would domineer over the rest of the litter, including the dog pups, and at eight months old she was more masculine and rougher in play than they were.

And the following seems more appropriate from a writer of fiction than from a guide to medical men:

> The pituitary seems to play a special part with regard to rhythmic functions, and on the psychical side to show this in the direction of music and dancing, or on the more intellectual side with mathematical or more imaginative interests, widely as the last two seem to differ.

And what about the following?

> A young man of 23 was brought to see me who had been very late in learning to walk and talk. He showed me two photographs of himself taken at the age of 4 or 5; one of these looked like a normal child while the other looked degenerate. By the age of 6½ he had developed the habit of lying. He grew rapidly to the height of 6 feet 5 inches. His palatal arch was very high and his knuckles were very large. He was a confirmed liar and thief and was suspected of deliberate and wilful arson. . . . The fossa becoming too small for the gland, the patient is apt to develop moral and intellectual inferiority, to suffer from compulsions and obsessions and to lack inhibitions. As Berman puts it, such individuals are "pathological liars with little or no initiative or conscience."

On page 111 the author, quoting with apparent approval the speculation that the anterior lobe of the pituitary tends to produce virile characters and the posterior lobe feminine characters, adds this charming bit of evidence:

> We are all familiar with the inseparable couple of women friends. One of the two usually adopts a somewhat masculine rôle, and I have been struck on several occasions to note the number of signs she presents of overactive anterior pituitary.

On page 113 the author states that "persistence of the thymus produces, in addition to status lymphaticus physically, a "mother's darling" psychologically.

On the question of testicular transplantation the author quotes Dr. Kenneth Walker with approval to the following effect:

> Up to the present time I [Dr. Walker] have performed Steinach's operation on fifteen cases, and although it is difficult to eliminate the element of suggestion I believe that in at least half of these cases an improvement in general health and an increase in mental vigor have taken place. I am particularly inclined to recommend the operation in the treatment of that hopeless malady of later life, paralysis agitans, having seen a very marked improvement in two out of four cases which I have treated in this way. . . . It is frequently advisable to combine testicular grafts with the use of extracts of other endocrine glands, notably of the pituitary, the suprarenals or the thyroid.

The author refers to pituitary extract again and again as a lactagogue, although it was shown many years ago that it has no influence on milk production except to retard it when pituitary extract is used in large doses; and, despite the growing evidence that the hormone of the parathyroid gland is ineffective when given by mouth, the author persistently refers to the therapeutic effects by giving parathyroid material by mouth. In the same way the author seems to be unfamiliar with much of the work tending to show that diabetes insipidus is due to brain injury and not to hypofunction of the posterior lobe of the hypophysis, that obesity associated with Fröhlich's syndrome is of brain origin and not an index of depression of the function of the anterior lobe of the hypophysis.

After completing the book the reader will have the impression that the author is a charming fellow, disinclined to question or contradict, with little information and much faith. In view of the general poor and unreliable character on the book, it is surprising to find that the best chapter is the eleventh, headed "Endocrine Therapy." To be sure, we meet here such statements as "oral administration of parathyroid extract certainly seems to be effective" and "Extracts of the whole pituitary gland should be given in cases of defective growth and development." He puts forth a rather weak argument for pluriglandular therapy, but adds at once, "One must admit that pluriglandular therapy is generally irrationally applied."

The author seems most confused in the field of the pituitary gland. On page 64 he says: "Underaction of the posterior lobe may lead to general obesity or localized fatty deposits. Of the latter type Dercum's disease—adiposis dolorosa—is a good example. . . . The disease is refractory in treatment, but I have seen decided benefit from thyroid extract together with injections of pituitrin, especially when combined with a suitable diet for obesity." This is not only pluriglandular therapy, it is shotgun therapy. The adipose patient thus treated will very likely lose weight, but losing weight on such management does not help us to learn the cause of adiposity. The monograph is not a serious contribution to the theory or practice of medicine. It will be a hindrance rather than a help to the progress of general practice.

HISTOCHEMIE DER HAUT. Von Prof. P. G. Unna. Paper. Price, 20 marks. Pp. 163, with 69 illustrations. Leipsic: Franz Deuticke, 1928.

This is a technical description of the newer methods of vital staining of the structures of the skin without the use of fixatives. The chemistry of the living cell is interpreted by the method of chromolysis and by a study of the oxidation and reduction reactions. The subject matter, as usual with publications from Unna's laboratory, is difficult to follow. A scientist trained in histologic technic and biochemical methods will probably have less difficulty in interpreting the text than a practical dermatologist.

GREGG MEDICAL SHORTHAND MANUAL. By Effie B. Smither. Cloth. Price, $2. Pp. 191. New York: Gregg Publishing Company, 1927.

The author of this volume has been secretary to a physician, who is at the same time a competent writer. With remarkable optimism she has compiled some hints to medical stenographers with the hope that they will learn them. She provides definitions, numerous word signs, prefixes and suffixes. Any stenographer who writes Gregg shorthand and who wishes to improve herself with a view to obtaining a high position in this field will be greatly helped by Miss Smither's contribution.

THE TONGUE AND ITS DISEASES. By Duncan C. L. Fitzwilliams, C.M.G., M.D., Ch.M., Surgeon and Lecturer on Surgery to St. Mary's Hospital. Cloth. Price, $11. Pp. 505, with 166 illustrations. New York: Oxford University Press, 1927.

According to the preface, "perhaps the chief lesson of this book is that cancer of the tongue, in place of being the hopeless disease that the laity, and many physicians and some surgeons seem to think it is, is just as curable in its early stages as is cancer elsewhere." Seven of the twenty-six chapters are devoted directly to malignant conditions. The author's experience and a wide acquaintance with medical literature furnish here, as in most other parts of the field under discussion, valuable information and opinion. The method of approach seems old fashioned, for a great deal of space is devoted to the review of cases; but they, like the numerous drawings, are for the most part well chosen illustrations of the subject matter. Here and there, as in the description of lichen planus and pellagra of the tongue, the author fails. In the latter case the description quoted from Morris is absolutely misleading. The failure to mention Osler in connection with multiple hereditary telangiectases

is also surprising. In addition to the many drawings mentioned there are four excellent colored plates, two of them on anatomic subjects, and the book is well printed on good paper. On the whole, it is a creditable addition to the all too scarce literature on the tongue.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

HANDBOOK FOR THE MEDICAL SOLDIER OF THE REGULAR ARMY, NATIONAL GUARD, ORGANIZED RESERVES, AND ENLISTED RESERVE CORPS OF THE ARMY OF THE UNITED STATES AND OTHERS INTERESTED IN NATIONAL MEDICO-MILITARY PREPAREDNESS. By Arnold Dwight Tuttle, Major Medical Corps, U. S. Army. Approved by the Surgeon General of the Army. Leather. Price, $5. Pp. 691, with 180 illustrations. New York: William Wood & Company, 1927.

The essentials of medical soldiering carefully systematized.

THE RATE OF LIVING. Being an Account of Some Experimental Studies on the Biology of Life Duration. By Raymond Pearl, The Johns Hopkins University. Cloth. Price, $3.50. Pp. 185, with illustrations. New York: Alfred A. Knopf, 1928.

Here it is proved biologically and by reasoning that the harder one lives the sooner one dies.

MEDICAL USES OF RADIUM. Summary of Reports from Research Centres for 1926. Medical Research Council. Special Report Series, No. 116. Paper. Price, 1s. net. Pp. 24. London: His Majesty's Stationery Office, 1927.

Summary of British points of view on uses of radium in various forms of cancer.

PSYCHIATRIE. Von Prof. Dr. Emil Kraepelin, und Prof. Dr. Johannes Lange. Band I. Allgemeine Psychiatrie. Von Prof. Dr. Johannes Lange. Ninth edition. Paper. Price, 54 marks. Pp. 954, with 44 illustrations. Leipsic: Johann Ambrosius Barth, 1927.

Second volume of a system of psychiatry printed with new type.

DIE WECHSELJAHRE DER FRAU. Von Privatdozent Dr. Hans Zacherl, Assistent der Universitätsfrauenklinik in Graz. Paper. Price, 7.50 marks. Pp. 127. Vienna: Julius Springer, 1928.

Monograph on various disturbances of the climacteric epoch in the woman's life.

SOCIAL LIFE IN THE ANIMAL WORLD. By Fr. Alverdes, Ph.Dr., Professor extraord. of Zoology in the University of Halle. Cloth. Price, $3.75. Pp. 216. New York: Harcourt, Brace & Company, Inc., 1927.

This reveals the social, sexual and other relationships of insects, fishes and mammals.

THE CHILD AND THE HOME. Essays on the Rational Bringing-Up of Children. By B. Liber. Cloth. Price, 50 cents. Pp. 248. New York: Vanguard Press, 1927.

Another reprint of somewhat irrational anecdotes out of the author's practice.

THE CLINICAL STUDY OF MENTAL DISORDERS. By Lt.-Colonel J. R. Lord, C.B.E., M.D., F.R.C.P. Cloth. Price, 6/-net. Pp. 82. London: Adlard & Son, Ltd., 1926.

Outlines of psychiatry in brief form.

MOSQUITO REDUCTION AND MALARIAL PREVENTION. A Précis. By J. A. Crawford, M.B., Ch.B., Capt. R.A.M.C., Officer in Charge Anti-Malarial Measures, Colaba Military Area, and B. S. Chalam, L.R.C.P. & S., L.R.F.P. & S., Officer in Charge, Anti-Malarial Measures, Bombay Reclamation Scheme. Cloth. Price, $1.75. Pp. 102, with illustrations. New York: Oxford University Press, 1926.

MIKROMETHODIK—QUANTITATIVE BESTIMMUNG DER HARN-, BLUT- UND ORGANBESTANDTEILE IN KLEINEN MENGEN FÜR KLINISCHE UND EXPERIMENTELLE ZWECKE. Von Ludwig Pincussen, Direktor der biochemischen Abteilung des Städt. Krankenhauses am Urban in Berlin. Fourth edition. Paper. Price, 6 marks. Pp. 200, with 31 illustrations. Leipsic: Georg Thieme, 1928.

MENTAL HOSPITALS AND THE PUBLIC: The Need for Closer Co-operation. By Lt.-Colonel J. R. Lord, C.B.E., M.D., F.R.C.P. In the Aid of the Work of the National Council for Mental Hygiene. Paper. Price, 1/6 net. Pp. 33. London: Adlard & Son, Ltd., 1927.

Miscellany

A FEW THOUGHTS FOR THE MEDICAL STUDENT*

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I have made a somewhat unsuccessful attempt to discover the origin and purpose of this annual discourse to the incoming students. As we reckon time at Jefferson, it is a more or less ancient custom. Since it usually contains a generous measure of counsel and advice, it may have been made necessary originally by older and more degenerate days. According to Sir William Osler, "there was a time, and it is within the memory of some of us, when, like Falstaff, the medical student was given to taverns and sack and wine and metheglins, and to drinkings and swearings and starings, pribbles and prabbles." Happily, the stern demands of the modern medical curriculum, possibly aided and abetted by the national tendency to legislate for us our morals and habits, have relegated such cavortings to the dim country of fading memories, so that, as Sir William concludes, "the Meds now roar you as gently as the Theologs."

These remarks are always delivered by a younger member of the faculty. It may be that the senior professors hope that a junior will not be so far away from his own student days but that he will remember more acutely the joys and sorrows; the hopes, though occasionally the deferred hopes and, speaking somewhat optimistically, the final thrill of triumph, and, remembering them, forewarn and forearm you. It may be, too, that they know in their wisdom that the junior faculty will be the better for the serious thought which this occasion inspires.

A third object of this address is to sound a note of welcome and to admit you into the honorable guild of medical students. "Except it be a lover, no one is more interesting as an object of study than a student. Shakespeare might have made him a fourth in his immortal group. The lunatic with his fixed idea, the poet with his fine frenzy, the lover with his frantic idolatry and the student aflame with his desire for knowledge. The student who is the genuine article may be recognized by an absorbing desire to know the truth, an unswerving steadfastness in its pursuit, and an open, honest heart, free from suspicion, guile and jealousy." The moral contained in this description might be profitably elaborated.

WORK

Presumably you are all filled with a holy and consuming passion to work. By work I mean labor and hard labor at your books and in the laboratories. If you do not so labor, then it is only fair to predict that your swan song in medicine will soon be sung. It may be suggested that you select a certain period of time each day for study, and stick to it, even though the heavens fall. When Edward Martin, the well known story writer, was asked what time he found best for work, he replied, "Not in the evening, and never between meals!" This answer may appeal to some of my hearers. Erasmus says, "Never work at night; it dulls the brain and hurts the health. . . . One day, going with George Ross through Bedlam, Dr. Savage, at that time the physician-in-charge, remarked upon two groups of patients—those who were depressed in the morning and those who were cheerful, and he suggested that the spirits rose and fell with the body

* Read at the opening exercises of the one hundred and third session of Jefferson Medical College, Sept. 21, 1927. The quotations are from Sir William Osler's essay, "The Student Life" from "Modern Essays," selected by Christopher Morley, 1921, New York, Harcourt, Brace & Co.

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temperature—those with the very low morning temperatures were depressed, and vice versa. This may explain the extraordinary difference in the habits of students in this matter of the time at which the best work can be done. Outside of the asylum there are also two great types, the student-lark who loves to see the sun rise, who comes to breakfast with a cheerful morning face, never so fit as at 6 a. m. We all know the type. What a contrast to the student-owl with his saturnine morning face, thoroughly unhappy, cheated by the wretched breakfast bell of the two best hours of the day for sleep, no appetite, and permeated with an unspeakable hostility to his vis-a-vis, whose morning garrulity and good humor are equally offensive. Only gradually, as the day wears on and his temperature rises, does he become endurable to himself and to others. But see him really awake at 10 p. m. While our blithe lark is in hopeless coma over his books, from which it is hard to arouse him sufficiently to get his boots off for bed, our lean owl friend, Saturn no longer in the ascendant, with bright eyes and cheerful face, is ready for four hours of anything you wish—deep study or . . . heart affluence in discoursive talk, and by 2 a. m. he will undertake to unsphere the spirit of Plato."

You need not take your own temperature to discover your best working time. Probably you already know it. Whenever it may be, its hours are golden and their every second is precious. Do not neglect to utilize them.

In your desire to know the truth you must avoid too ready acquiesence. As soon as you can, get into the habit of testing things for yourself. Do not let yourself become an echo—that slavish creature who in the parlance of the day is called a "yes" man. You would be surprised to know how often textbooks of medicine make and repeat mistakes, and it may be whispered that even professors are not infallible. John Hunter admonished the student as follows: "Do not think but try," and this attitude of mind is valuable to cultivate. The question came up one day, when discussing the grooves left on the nails after fever, how long it took for the nail to grow out from root to edge. The majority of the class had no further interest, a few looked it up in books, two men marked their nails at the roots with silver nitrate, and a few months later had positive knowledge on the subject. The little points that come up in your reading, and, later on, in the examination of your patients, you should try to test out for yourselves.

Remember that medicine is more of an art than a science. Theories come and theories go. Sometimes they leave valuable residuals; often they are sunk without a trace. You will only escape scientific perdition by keeping the mind plastic and receptive. It is an unfortunate thing that so many men even in their student days develop certain theories and beliefs from which they cannot be moved, and, therefore, they soon begin to look at everything, every set of symptoms, every new patient, through the same pair of spectacles. Thus, discovery is blocked. In the past, for instance, advances in psychiatry were immeasurably retarded because so many men insisted that the blame for every case of mental disease ought to be put on heredity. So fanatical did the adherents of this doctrine become that their extreme position can best be illustrated by the story of the woman who had housemaid's knee and insisted that it was inherited because her father had been a pavement artist and her mother a religious fanatic. Of course, heredity is of tremendous importance, but neither it nor anything else is so important that it should be permitted to contract the field of mental vision, so that the student begins to suffer from intellectual myopia. Therefore, it may be a fair injunction to say to you, Never close your mind against new impressions and never adhere so rigidly to any theory that it dominates all your thinking.

EVERYDAY RESEARCH

I should like to say a few words about research. It may seem strange to bring this before you—you who have yet to win your spurs as medical students—you who have not yet listened to the first formal lecture in the curriculum. From another point of view, it is exactly the proper time to mention it. If one does not get started on research very early, it never gets done.

To most of us a word does not signify precisely what it means, as much as it does the associations which it brings up in our minds. This is certainly true of the word research. When we think of research there is apt to be conjured up before our mental eyes a picture of costly temples of study far removed from everyday existence and into which none but the initiated may enter. In this country we may well be proud of the great centers of study and investigation that have been erected on every side. The difficulty is, however, that, after all, only few of us can tend such highly placed lamps of scientific culture and cannot afford to devote our lives to what is commonly spoken of as pure research. It is exceedingly improbable that more than a dozen in the average medical school will be able eventually to follow this path. The sad thing is that usually no other type of research is recognized.

There is another type, which, although it is not done in great and stately buildings, is just as worth while. This kind of study might be called everyday research and it is within the reach not only of every practitioner of medicine but of every medical student, from the very first day of his freshman year. The word research means to examine or study with diligence and care. In short, it means to look or search again. From almost this very hour you will have boundless opportunities to do this. Instead of casually passing over a difficult or unusual bit of dissection, work it out meticulously; instead of accepting an experiment in chemistry or physiology or a histologic slide offhand, try them again or look at it again and new possibilities will appear; instead of merely committing a heart murmur to your auditory memory, listen to it again and again with your intellect as well as your ear, until you begin not only to hear it but also to understand and appreciate it; instead of hurriedly placing on paper a fragment of history which a patient may give you, view it carefully from as many angles as you can, ask questions, and then you will get far-reaching impressions and astounding mental vistas, not only of the life history of that patient, but also of the potential histories of many patients.

If this were done every day by every practitioner of medicine and every medical student, the sum total of the knowledge which would soon be accumulated would be enormous and medical science would be advanced by leaps and bounds. Large sums of money and unbounded facilities do not of necessity spell great discovery. Some of the most astounding and epoch making contributions in the history of medicine came from the brains of men who were without many facilities and scientific refinements. The point to be made is this—that, although it is of the utmost importance to accumulate resources to support research in medicine, yet their absence or their limitation need not fill us with discouragement.

It has been said that the only neurologic events of moment in the year 1825 were Bouillaud's account of cortical aphasia and the birth of the great neurologist Charcot. Charcot is a typical example of a man who did his research in his everyday practice. He taught at the Salpêtrière in Paris, where he sat behind the railing in the little dispensary and examined those who were brought to him. Through the power of his keen observation, many disease entities were sorted out and the foundation of organic neurology was laid.

One need not go back a hundred years to find men who exemplified what could be accomplished by everyday research. The faculty of this college will furnish you with as typical an example as may be found. Supporting the brilliant and incisive surgical diagnosis of J. Chalmers Da Costa are years of careful and exact observation and comparison. You see the finished picture and marvel at its beauty and perfect coloring, but you may not see the patience and the skill with which the pigments have been mixed. These men—Charcot, Da Costa and others—simply followed the injunction to search, examine and study with diligence and care and to look again and again. This, if you choose, every one of you may begin to do at once.

OBSERVATION

It is remarkable to what a limited degree we use our powers of observation. You may remember that the great detective Sherlock Holmes (whose creator, by the way, was a physician) pointed out to Watson that although he had walked up the stairway of their lodgings many, many times, yet he was unable to tell the exact number of steps. In medicine it has become so easy to apply an instrument or to take a roentgen-ray picture or even to open the abdomen that there is some danger that our faculty of observation may begin to atrophy, just as has our sense of smell. As you know, lower down in the scale of evolution the smelling lobes of the brain are beautifully developed and occupy a large space. In man they are cramped and by comparison quite insignificant. Observation means more than simply looking. Observation in medicine means not only looking but seeing; training the whole battery of previously acquired knowledge on what is being observed, and comparing, bringing the lenses of judgment to bear and eliminating and interpreting and finally recording. The attention must be whole-souled and single in its purpose if anything is to be so engraven on the mind that it may be readily recalled in the future.

In the practice of psychiatry one sees many patients who are neurasthenic; i. e., mentally tired. Almost always they complain of inability to remember. Actually, they do not remember very well not because the memory has degenerated but simply because the attention is so focused on their own sick bodies that other stimuli either fail to register or register very inadequately. It will not do at all to become neurasthenic about the study or practice of medicine. You may have to pay a high price for the failure to attend. This does not mean that you may not be able to answer an examination question at the end of the year (though this is certainly not impossible), but it is of little moment compared to the larger and more serious examination with which you will be confronted one day as you stand by the bedside of a sick patient who is looking to you to stay the hand of death.

It has been advocated that a good initiation into the clinical years of medicine would be the practice of having the student physician sit beside the patient for at least three hours, not asking questions nor even touching, but simply recording what can be observed and then looking again and again until everything visible to the naked eye has been noted. Some of the greatest diagnosticians were little more than highly trained and shrewd observers. They saw each patient from a hundred different aspects. If you do not at once in your student years acquire a highly specialized faculty of observation and a rigidly controlled attention, they will forever elude your grasp and there will be a lack in your medical armamentarium which no amount of instruments will ever supply.

PRACTICAL THINKING

In the study of medicine you must be hard headed and practical. Being a student has its fascinating temptations. Osler remarks that "it is possible to become so absorbed in the structure of the flagella of the Trichomonas or the toes of the prehistoric horse that the student loses the sense of proportion in his work, and even wastes a lifetime in researches that are valueless because not in touch with current knowledge" and, one might add, unpractical.

Not so many years ago a graduate of a noted technical school applied to Thomas Edison for work in his laboratory. Handing the young man a glass vessel of odd and very irregular shape, Edison said, "I am anxious to know the exact capacity of this vessel." The applicant seized the opportunity with enthusiasm. For four days he labored and with the aid of higher mathematics filled many pages of a note book with closely written figures. Finally, he proudly handed the result of his work to the great inventor. Edison studied the note book and scrutinized the answer. Then he took the vessel, filled it carefully to the brim with water, and this in turn he poured into a graduated measuring beaker. "I congratulate you, my boy," he remarked; "you are only 3 per cent off in your calculation."

After all, medicine is a very practical subject. It must be since its object is to prolong human life and to multiply its blessings. All legitimate short cuts are permissible. As you pursue your studies you will be presented with facts and experiences and theories and suggestions. Presumably all of you will remember them, but only those among you who will know how to utilize them quickly and forcefully in the right time and in the right place—only they will become the great doctors.

CULTURE

From time to time, one hears the criticism that medical men, by and large, no longer have the broad cultural interests that they formerly had. There was a time when a large share of the traditions of culture was in the keeping of the physicians. Now, one is apt to hear the opinion expressed that the doctor has become so immersed in his profession that he is rather out of touch with literary and artistic and to a certain extent dynamic commercial and political movements. It is said that he has a single track mind.

You have probably heard the story of the young lady who said she had not read "The Kentucky Cardinal" since she was not interested in theology. "But," pursued the questioner, "this cardinal was a bird." "Oh," answered the young lady, "I never bother with scandal."

There is another story which I believed originated in the Lambs Club. A young man conceived an ardent admiration for a chorus girl. As the Christmas season approached he consulted her friend for suggestions as to a gift. "I had thought of giving her a first edition," he said to the friend. "What is a first edition?" she asked. "Oh," replied the young man, "its a book." "Don't give her a book," counseled the friend very earnestly, "she has a book." It would not be fair to imply that the physician is hopelessly out of contact with extramedical affairs, but there is no doubt that he has to pay some cultural penalty as the price for the tremendous tax which medicine in its study and practice makes on his time and intellectual capacity.

Remember there are frontiers of culture which extend beyond medical boundaries. I hesitate to tell you what a small fraction of time will be left over from your studies and medical interests. But, doubtless, there will be a spare hour now and then. You are going to spend the greater part of the next four years in Philadelphia, and Philadelphia has some claim to being a city of culture. Somehow, the city has managed to avoid the extremes of a jazz mad age, and the canons of art, music and literature have been held more or less inviolate and intact. It might be suggested that during your stay here you make some aquaintance with the museums, the libraries and the music of Philadelphia. It may be that you will be able to place a foundation of extramedical learning on which, later on, there will be

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erected a beautiful edifice which will be a constant joy and satisfaction to you and those who come into contact with you. Only this caution—medicine has the first claim and for the time being such mundane things as bones and histologic slides, chemical formulas and heart murmurs are more important for you than the strains of an immortal symphony.

YOUTH

Possibly you look at the next four years with some hesitation and trepidation. Probably you have already said to yourself, "How nice it must be to be a doctor," or "I wish I were through and done with it and engaged in the practice of medicine," or even "How good it must feel to have a seat in the faculty." May I say that you have one invaluable asset for which many a renowned physician or surgeon or faculty member would cheerfully barter all his honors. You have that priceless talisman Youth. You may remember the remark of Sir William Osler to the effect that men ought to be chloroformed when they reach the age of 40 and the tempest which was stirred up in the teapot of newspaperdom. Sir William was not too serious, and yet there was a vestige of truth in what he said. New ideas do not come readily after the first half of life has been lived. Old ideas are revamped, worked over in detail, elaborated, matured and perfected, all with great benefit to humanity; but, nevertheless, the strikingly original is seldom encountered. Only a very young eagle could have dared the unknown and for the first time safely flown across the gray and threatening Atlantic.

There are a number of reasons why this is so. In the first place, it is natural that the greater richness and plentitude of experiences should be unfolded in the first few decades of life. Again, youth has an energy and a flexibility which is peculiar to itself and which rapidly recedes as age advances. Finally, youth lacks caution. In other words, there is nothing to lose. Usually when a man has entered the fifth decade his intellectual fortune has either been made, its making is assured, or else he is perilously near failure. In the latter instance the chances are against the probability of mending his condition, and it is likely that he will remain commonplace and mediocre. On the other hand, if he has established himself he is apt to become cautious. Now he has something to lose. Caution stays his hand and he thinks unduly of his reputation when he is tempted to embark on uncharted seas.

It is more than a coincidence that so many great discoveries in medicine and in allied fields were made by young men. In the third decade of their lives, between the ages of 20 and 30, there is to be found in medical history a galaxy of genius which it would be hard to surpass: Jan Swammerdam, Crawford Long, William Thomas Green Morton, Darwin, Eustachius, Vesalius, Ehrlich, Paré, Jenner, Neisser, Bichat, Semmelweis, von Helmholz, du Bois-Reymond, Velpeau, Carl Ferdinand von Graefe and his son Albrecht, and many others. Together this group of men, whose average age was not more than that of this freshman class, contributed the following monumental discoveries; the first observation of red blood corpuscles in the blood of the frog, the initial use of ether, the work on the origin of the species, the first complete anatomic tables, the discovery of mast cells and the technic of staining, the first exarticulation of the elbow, vaccination, the discovery of the bacillus of gonorrhea, a treatise on membranes, the recognition of the infectiousness of puerperal fever, the establishment of the law of the conservation of energy; the discovery of the difference of potential between the cut and the uninjured end of excised muscle or nerve and the definition of electrotonus, the publication of the original detailed work on surgical anatomy, the operations for iridectomy and cleft palate, and the foundation of plastic surgery.

In the fourth decade, at an average age of less than 34, Thomas Bartholinus described the existence of the thoracic duct, John Abernethy ligated the external iliac artery for aneurysm, Ephraim McDowell performed the first ovariotomy, John Priestly discovered nitrous oxide, Laënnec invented the stethoscope, Robert Koch discovered the tubercle bacillus, von Behring first used diphtheria antitoxin, Frederick Banting discovered insulin, Madam Curie did her work on radium, Pasteur did his work on ferments, Paré published his treatise on gunshot wounds, Lavoisier discovered oxygen, Schaudinn described *Spirochaeta pallida*, Skoda systematized percussion and auscultation, Widal suggested his diagnostic test for typhoid, Claude Bernard determined the glycogenic function of the liver, Bell published his anatomy, Hodgkin described a disease entity, and Ricord differentiated gonorrhea and syphilis.

When we come to the next decade, the fifth, the years between 40 and 50, there is a sharp decline in the frequency of medical genius. Lord Lister had just turned 40 when he communicated the successful results of antisepsis. Finally, William Harvey at the age of 50 described the circulation of the blood. There is, however, little doubt that this publication was delayed for many years. Perhaps Harvey anticipated the storm of protest which would greet his remarkable effort and wanted a few more years to show as evidence of intellect.

You may take these names and what they stand for as stars to which you may aspire. You who have strong and willing muscles, brave hearts and flexible minds scarcely need any words of encouragement from us. Your purpose and your youth should be sufficient to carry you headlong to success. Still, it may not be amiss to give you Godspeed, and in the name of our president and the board and the faculty, I give it to you from my heart.

345 South Nineteenth Street.

Medicolegal

Aggravation of Employee's Injuries by Malpractice

(White v. Matthews (N. Y.), 223 N. Y. Supp. 415)

The Supreme Court of New York, special term, New York County, says that it appeared that the defendant physician was employed by the plaintiff's employer to treat the plaintiff's injuries received in the course of her employment. The plaintiff sued the defendant for malpractice, claiming that he was unskilful and negligent, and that as a result of his lack of skill and his negligence she was greatly damaged. The defendant contended that the awards which were made to the plaintiff by the state industrial commission, under the workmen's compensation act, were accepted by her as full compensation for all the injuries set forth in her complaint in this action, and that, in accepting those awards, she was barred from "further prosecuting a claim for said injury or the consequential result of said injury against this defendant"; that the remedy by way of a claim under the workmen's compensation act is exclusive, and that the complaint should therefore be dismissed.

If one injured, suing at common law for damages, has his injuries added to by malpractice on the part of the physician engaged to treat the injury, it would seem that one liable for the original injury may be held liable for the entire damages sustained. The test seems to be whether the added injury arose out of the first injury or would not have happened but for the first injury, and was not due to the negligence or carelessness of the injured party. It seems clear, therefore, that a recovery against and a satisfaction by the first tort-feasor (wrongdoer) would bar an action against the physician guilty of malpractice. That principle would seem

to hold good, whether or not the satisfaction was obtained by the injured person as a result of an action at common law or as result of an election made to obtain compensation under the workmen's compensation act.

The complete defense which the plaintiff sought to strike out, among other things, alleged that the "said awards made to plaintiff under the workmen's compensation act were in compensation of all the injuries set forth in the complaint herein." The court is therefore of the opinion that, if the facts were as stated in the separate defense, the plaintiff was not entitled to obtain further recovery, and that the said defense was sufficient in law. Wherefore the plaintiff's motion to strike out is denied.

Competence as Witness of Physician Holding Necropsy

(Mathews v. Rex Health & Accident Ins. Co. (Ind.), 157 N. E. R. 467)

The Appellate Court of Indiana, in reversing a judgment rendered in favor of the defendant, says that the plaintiff brought this action as the beneficiary of an insurance policy on the life of her son. The insured died in a hospital, and to determine the cause of his death his body was taken to the necropsy room, where a necropsy was performed by a physician in the employ of the hospital who was the director of the laboratories and the pathologist of the hospital, but who was not one of the physicians on its medical staff, and who had not treated the insured nor seen him prior to his death. The physician was permitted, over the objection of the plaintiff, to testify concerning the examination made by him and to the condition of the internal organs, and testified to a state of facts sufficient to avoid the policy and prevent a recovery on it. The case came to this court on a reserved question of law, relating to the competence of this witness, and, so far as the court was able to discover, the question presented had never been passed on by any appellate tribunal.

Under section 550 of Burns' 1926 annotated statutes of Indiana, physicians are not competent witnesses "as to matter communicated to them, as such, by patients, in the course of their professional business, or advice given in such cases." The plaintiff contended that this statute rendered the physician an incompetent witness, and that the admission of his testimony was reversible error.

Generally speaking, the correct rule would seem to be that, where the statute renders an attending physician incompetent to testify, any information acquired by him by reason of a necropsy performed by him on the body of a former patient is privileged, but, if the information was acquired by a necropsy on the body of a person who was not prior to his death a patient of the physician performing the necropsy, the information acquired by the physician is not privileged.

In the instant case, after the death of the insured his body was placed on the table in the necropsy room by some one in authority, and the physician in question performed the necropsy as a part of his duties as head of the pathologic department of the hospital, the purpose of which was to discover the cause of death. The fact that the insured was a patient at the hospital provided the opportunity for having the necroscopic examination. It was the outgrowth of the relationship existing between the patient and the hospital, and it would not have been performed except for the fact of that relationship. If it had been held by the physician who treated the insured before his death, such physician would have been an incompetent witness as to any information acquired by reason of such examination. Any physician or surgeon assisting him would also have been incompetent to testify, over objection, to any knowledge acquired thereby. Can a physician after the death of his patient, through his consent or connivance, allow another physician to take the dead body of his patient, and, in the absence of friends and relatives, and without the consent of any one, hold a postmortem examination, and thus give to the public the information which the physician in charge could not? Can a hospital, immediately after the death of one of its patients, discharge the physician who had attended the patient up to the time of death, and thereafter rush the dead body to the morgue, and direct the physician at the head of the pathologic department to perform a necropsy, and thus evade the statute which sealed the lips of the first physician? This court thinks these questions should be answered in the negative, and that a physician under such circumstances steps into the shoes of the attending physician, and must be treated as if he were the assistant of the attending physician holding the necropsy at the direction of the latter, and that the information acquired by him through the necropsy is privileged.

A physician should not be privileged to authorize or permit another physician to hold a necropsy on one of his patients and thus destroy the privileged character of the information thus acquired. Nor should a hospital, after the death of one of its patients, authorize or permit a physician other than the attending physician to hold a necropsy and destroy the privileged character of the information thus acquired. In order to protect those who are so unfortunate as to become patients in a public hospital from having their bodies violated after death, in order to discover the cause of death, and thus qualify a physician to appear in court as a witness and disclose the cause of death, this court is constrained to hold that the trial court erred in allowing the physician to testify as to the information he acquired through the necropsy. He had no more right to make that examination and to disclose the information thus received than he would have had if he had gone into the sickroom prior to the death of the insured and made an examination to ascertain the cause of his illness, and then to go into court and testify as to the information thus acquired. He should be treated as an assistant of the physician in charge prior to the death of the insured.

Wife Entitled to Medical and Dental Services

(People v. Beckman (Mich.), 214 N. W. R. 950)

The Supreme Court of Michigan, in overruling exceptions to a conviction of the defendant of refusing and neglecting to support his wife, says that the latter testified that the amount paid her ($8 a week) was insufficient to support her. It was contended that this was a conclusion, but the court does not think that her statement that the amount she received was insufficient constituted reversible error. The court thinks that, as bearing on the question of necessities, it was proper to show the state of her health and that she was in need of medical and dental services. The husband did not discharge his duty by furnishing only enough money to buy sufficient food to keep body and soul together. In addition to food the wife was entitled to shelter, fuel, clothes, and medical and dental services, if necessary. On the record, it was for the jury to say whether these necessities had been provided by the defendant. The case was one for a jury.

Testimony as to Roentgenograms Confirming Diagnosis

(Stiles et al. v. Maclean (N. J.), 138 Atl. R. 119)

The Supreme Court of New Jersey says that in two actions to recover damages for personal injuries from an automobile accident which were tried together, an orthopedic surgeon first testified to the serious and permanent injury to the spine of one of the plaintiffs as disclosed by his physical examination, and later testified that roentgenograms that were lost and not produced, but which he had examined, confirmed his diagnosis. The court holds that the latter testimony did not affect the substantial rights of the parties, since there was not the slightest suggestion that the witness placed any reliance on the roentgenograms, except to confirm his diagnosis made independently of them, the accuracy of which was not questioned at the trial and not seriously questioned on appeal. There was nothing here calling for a reversal of the judgment rendered for that plaintiff.

Society Proceedings

COMING MEETINGS

American Association of Anatomists, Ann Arbor, April 5-7. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.

American College of Physicians, New Orleans, March 5-9. Mr. E. R. Loveland, The Covington, 37th and Chestnut Streets, Philadelphia, Sec'y.

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Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American J. Public Health, Albany, N. Y.

17: 1209-1302 (Dec.) 1927

Present Status of Maternal and Infant Hygiene in United States. L. K. Frankel, New York.—p. 1209.

Relation of Paratyphoid Bacilli to Food Poisoning. E. O. Jordan, Chicago.—p. 1221.

School Ventilation: Effect on Health of Pupil. T. J. Duffield, New York.—p. 1226.

*Has Prohibition Promoted Public Health? H. Emerson, New York.—p. 1230.

Epidemiologic Study of Undulant Fever in Michigan. P. F. Orr, Lansing, Mich., and I. F. Huddleson, East Lansing, Mich.—p. 1242.

Flood in Massachusetts. G. H. Bigelow, Boston.—p. 1248.

Has Prohibition Promoted Public Health?—The best statement of the effect of alcohol on the human organisms is, in the opinion of Emerson, that of the distinguished advisory committee of physicians in its report to the Central Liquor Control Board of England in 1918. With their conclusions he is in entire agreement. In the absence of any evidence that health, as revealed by vital statistics, is less good in the United States in 1927 than it was in 1920, and since there is good reason to believe that less rather than more alcohol per capita is now being consumed in this country than when traffic in alcoholic beverages was an industry acceptable under the law, and since it is known that alcohol used by healthy persons does not add to their health, it is Emerson's opinion that some of the general improvement in health since prohibition is the result of outlawing commerce in alcoholic beverages. The housing and living conditions of the wage earners of this country have been much improved by the process of diverting the 5 and 10 per cent of their income which used to go regularly into liquor toward more valuable commodities, such as shelter, food, clothing and wholesome recreation. Emerson conceives the evidence sufficiently impressive, even though far from complete or accurate in the scientific sense, to justify health officers and workers in using all their power of education to reduce to the minimum the use of beverage alcohol in their communities.

American Journal of Surgery, New York

3: 523-628 (Dec.) 1927

*Myofascitis: Pathologic Explanation of Many Apparently Dissimilar Conditions. F. H. Albee, New York.—p. 523.

Low Back Sprain: Sacro-Iliac Syndrome. H. Lusskin and H. Sonnenschein, New York.—p. 534.

*Dilatation of Ureter in Male. W. J. Carson, Milwaukee.—p. 541.

*Intestinal Obstruction Due to Stricture Following Herniotomy for Strangulated Hernia. E. H. Eising, New York.—p. 552.

Clinical Behavior of Normal and Diseased Gallbladder. V. G. Burden, Philadelphia.—p. 556.

Management of Chronic Cholecystitis. F. B. McCarty, Chicago.—p. 564.

Cholecystectomy with Cystic Duct Drainage as Routine Procedure. W. O. Sweek and T. W. Woodman, Phoenix, Ariz.—p. 573.

Intense Methods of Applying Heat for Relief of Pain and Other Therapeutic Effects. J. H. Kellogg, Battle Creek, Mich.—p. 577.

Primary Repair of Lacerated Tendons and Nerves. H. B. Eisberg and H. D. Sonnenschein, New York.—p. 582.

*Method of Recording Muscle Tests. C. L. Lowman, Los Angeles.—p. 588.

*Corrective Device for Soft Tissue Contractions of Knee and Elbow Joints. H. C. Masland, Philadelphia.—p. 592.

Adjustable Metatarsal Pad. H. Milch, New York.—p. 594.

Mammary Tuberculosis in Male. A. M. Dickinson, Albany, N. Y.—p. 595.

Preliminary Medication in General Anesthesia. C. W. Hooper and J. T. Gwathmey, New York.—p. 598.

Postoperative Complications of Suppurative Appendicitis. C. W. Cutler, Jr., New York.—p. 602.

Myofascitis.—The fact that stretching under an anesthetic has given permanent or temporary relief in cases of myofascitis erroneously diagnosed as sacro-iliac strain has led, Albee says, to the misinterpretation on the part of the attending surgeon that the stretchings had relieved the symptoms because of the mechanical readjustment of the sacro-iliac joint. In the light of his observations, it is evident that this is not the cause of relief. Rather, manipulation has stretched sensitive fascial structures formerly toxic, and thus relieved the symptoms until the toxic condition recurred. Working on the premise of myofascitis attendant on toxic absorption, it is surprising how consistently many baffling cases work out, and are cured, particularly those of low back pain.

Dilatation of Ureter in Male.—In 185 consecutive autopsies on males, Carson says ureteral dilatation was encountered in twenty-three cases (12.4 per cent); it was bilateral in fourteen, rightsided in five, and leftsided in four. Dilatation of the ureter was accompanied by hydronephrosis in thirty-one instances (88.5 per cent). Infravesical obstruction was the etiologic factor in eleven cases (47.7 per cent). Ureteral stricture was found in five cases, four of inflammatory origin and one congenital.

Fibrous Stricture of Intestine Following Herniotomy.—Eising cites two cases of slowly developing obstruction due to fibrous stricture of the intestine which followed operative relief of strangulated hernia. The type of hernia may be inguinal, femoral or ventral. A satisfactory appearance on careful inspection of the injured intestine and mesentery at the time of the operation for strangulated hernia does not yield absolute proof of the viability of the segment involved. Follow-up examinations after the operation for strangulated hernia should continue for several months.

Recording Muscle Tests.—Lowman uses a scale composed of nine gradations, estimating muscle movement, effect on gravity as evidenced by joint movement, and muscle action against both gravity and resistance load.

Corrective Device for Soft Tissue Contraction.—The corrective device described by Masland is intended to exert a gradual elastic stretch on the contracted soft tissues of either a knee joint or an elbow joint over a sufficiently prolonged period of time. The device will give either simple flexion, or flexion with extension.

American Review of Tuberculosis, Baltimore

16: 655-778 (Dec.) 1927

*Bilateral Pneumothorax. T. J. Kinsella and P. M. Mattill, Oak Terrace, Minn.—p. 655.

*Purulent Tuberculous Effusions in Artificial Pneumothorax. J. N. Hayes, Saranac Lake, N. Y.—p. 680.

*Body Temperature in Pulmonary Tuberculosis. E. H. Funk and B. Gordon, Philadelphia.—p. 692.

Temperature-Pulse Ratio in Chronic Pulmonary Tuberculosis. C. A. Anderson, Tucson, Ariz.—p. 700.

*Leukocytes in Tuberculosis. E. M. Medlar and G. J. Kastlin, Madison, Wis.—p. 706.

*Differential Leukocyte Count in Pulmonary Tuberculosis: Value in Determination of Activity. W. H. Morriss and S. H. Tan, Wallingford, Conn.—p. 729.

Attempts to Produce Skin Hypersensitiveness with Nonacid-Fast Tubercle Bacilli. C. H. Boissevain and S. W. Schaefer, Colorado Springs.—p. 749.

Relation Between Loss of Acid-Fastness of Tubercle Bacillus and Hydrogen Ion Concentration. C. H. Boissevain, Colorado Springs.—p. 758.

Bilateral Pneumothorax.—From the records of twenty-eight patients treated by simultaneous bilateral partial pneumothorax, the following conclusions are drawn by Kinsella and Mattill: The procedure is safe if reasonable care is exercised. It is not attended by discomfort to the patient. The operator should be experienced in the administration of pneumothorax, and able to carry a lung at any desired degree of collapse for a long period of time. Institutional care, with strict rest in bed and frequent fluoroscopic and roentgenographic control, is essential. Frequent refills are usually necessary to maintain an even compression, the lung being held at the best position to control the disease rather than at any preconceived position. Refills should not be done on the two sides on the same day. Dyspnea was not encountered except with the formation of fluid, or on rare occasions when the most favorable position of collapse was passed. An average vital capacity of 1,200 cc., or an average of 39 per cent of the theoretical normal, was found in the current series. Respiratory rates were not increased. The absorption of air from the pleural cavities of these patients

is extremely variable. Results from the primary use of bilateral pneumothorax have seemed less favorable than when pneumothorax was used as a secondary measure. The results to date are encouraging and justify its use in a larger number of patients.

Empyema Complicating Artificial Pneumothorax.—Hayes presents an analytic study of thirty-two cases of empyema complicating artificial pneumothorax which he has encountered over an interval of seven years in the practice of Dr. Lawrason Brown and himself. Of these thirty-two patients, thirteen are living and eighteen dead, while one has not been traced but is probably dead. In the fatal cases the duration of the purulent effusions ranged from one-half to twenty-seven months, with an average duration of five months. In the living patients the duration from beginning to end of the purulent effusions ranged from three to twenty-one months, with an average of twelve months. In two patients still under care, the empyema continues after fifteen months. One patient is well and working; three after thoracoplasty are improved and under treatment; six others are improved and under treatment; one is under treatment with the opposite lung worse, and one is worse with tuberculosis of the ankle and is under treatment. In five cases the lung has reexpanded; in three it is compressed by thoracoplasty; in four the artificial pneumothorax is being continued, and in one no information was obtained.

Temperature in Pulmonary Tuberculosis.—A series of fifty-two patients in various stages of pulmonary tuberculosis were studied by Funk and Gordon with special reference to the rectal temperature as revealed by a recording resistance thermometer. Assuming that rectal temperatures are generally more accurate as an index of body temperatures than are temperatures taken by mouth, the dissimilarity of temperature variations in individual patients is emphasized. The generalization that the temperature in tuberculosis patients is lower in the morning and higher in the afternoon and evening may lead to many errors in individual patients if a rigid routine of temperature observations is instituted, especially if the routine includes as few as two observations a day, as is practiced in many institutions. A simple method for temperature observations is described. Thrice-daily observations according to the routine are made, until the patient is accustomed to the institutional care. Then a continuous twenty-four hour record is kept, to determine the periods of maximum and minimum temperatures. If these do not occur when the routine observations of the mouth temperature are made, then a special routine is outlined for the patient, as to both the hours and the number of daily observations. At intervals of ten days or two weeks, another twenty-four hour observation is made to check the observations of the mouth temperature.

Nature of Leukocyte Response in Tuberculosis.—Medlar and Kastlin believe that the leukocytic response in tuberculosis represents a reaction on the part of the different types of leukocyte to different types of injury of tissue. It is not a reaction to the tubercle bacillus as a foreign body, but rather to the tissue injured by the tubercle bacillus.

Characteristic Leukocyte Picture in Active Pulmonary Tuberculosis.—Morriss and Tan made 500 total leukocyte and differential counts on 200 sanatorium patients representing all stages of pulmonary tuberculosis. Characteristic changes were not found in the blood picture of inactive pulmonary tuberculosis. In active cases a characteristic picture was found consisting of a slight increase in the total count; a slight increase in the number of neutrophils; a slight decrease in the lymphocytes; an increase in the percentage and number of monocytes; no change in the eosinophils, and a definite lowering of the normal index. In the cases studied by repeated examination, it appears that the index remains low in progressive cases, tends to rise gradually in improving cases, and remains high in the quiescent case.

Arkansas Medical Society Journal, Little Rock

24: 133-150 (Dec.) 1927

Congenital Pyloric Stenosis. L. L. Purifoy, El Dorado.—p. 133.
Headaches of Unusual Origin. G. B. Fletcher, Hot Springs.—p. 136.
Medicine of Last Half Century. T. C. Reece, Walnut Ridge.—p. 139.

Johns Hopkins Hospital Bulletin, Baltimore

41: 311-440 (Dec.) 1927

Inorganic Constituents of Serum in Children with Acute Nephritis. K. D. Blackfan and B. Hamilton, Boston.—p. 322.
Tubular Nephritis (Nephrosis) in Children: Relationship to Other Forms of Nephritis. W. C. Davison and R. Salinger, Baltimore.—p. 329.
Bullous Impetigo Complicating Varicella. L. A. Eldridge, Jr., and T. M. Rivers, New York.—p. 354.
Transverse Lines in Roentgenograms of Long Bones of Children. M. M. Eliot, S. P. Souther and E. A. Park, New Haven, Conn.—p. 364.
Acid-Base Composition of Urine from Epileptic Child. J. L. Gamble and B. Hamilton, Boston.—p. 389.
Metabolism Following Injection of Diphtheria Toxin in Dogs. H. W. Josephs, Baltimore.—p. 400.
Calcification in Vitro: II. Inhibitory Effect of Magnesium Ion. B. Kramer, D. H. Shelling and E. R. Orent, New York.—p. 426.
Effect of Sunshine on Acidity of Intestinal Tract of Rachitic Rats. F. F. Tisdall and H. W. Price, Toronto.—p. 432.
Calcification in Vitro: IV. Effect of Inorganic Salts. P. G. Shipley and L. E. Holt, Jr., Baltimore.—p. 437.

Studies on Acute Nephritis in Children.—In cases of acute glomerular and tubular nephritis in children, the total fixed base of the serum has been determined by Blackfan and Hamilton, and an attempt has been made to obtain an estimate of the amount of total electrolytes in the serum. In tubular nephritis the total fixed base is nearly always markedly decreased, and the same is probably true as to the total electrolytes. In glomerular nephritis there often is a tendency to changes of the same kind as in tubular nephritis, although not so marked as in the latter condition. In one patient with very severe symptoms, however, the base was increased, and probably also the total electrolytes. Possibly this condition may be explained on the basis of a retention of electrolytes resulting from impaired kidney function.

Tubular Nephritis in Children.—During the past fifteen years, among 53,965 sick children in the Harriet Lane Home, twenty-six have been diagnosed as having tubular nephritis (nephrosis). Six of the twenty patients regarding whom definite information is at hand are well, and five of these have been so for more than seven years. Six of the twenty are dead. In eight, the disease is still active, although it cannot be said that they may not eventually recover. These cases indicate that (1) tubular nephritis (nephrosis) is a clinical as well as a pathologic entity, which can usually be recognized by its clinical course; (2) the etiology is as yet unknown; (3) the prognosis is better than other reports would seem to indicate, although it must be emphasized that the duration may be long and that several years may elapse before the patient may be permanently free from edema and albuminuria, and (4) at autopsy the tubules of the kidney are more markedly implicated than the glomeruli and interstitial tissue, although they, too, are injured. Davison and Salinger believe that the term tubular nephritis is preferable to nephrosis, and that the presence or absence of hematuria and edema is the most satisfactory criterion at present for the classification of nephritis in children into its three principal anatomic varieties—glomerular, tubular and interstitial.

Bullous Impetigo Complicating Varicella.—In the case cited by Eldridge and Rivers the bullous lesions contained an organism, *Staphylococcus aureus*, similar to that obtained from a discharging ear. The impetigo was successfully treated with gentian violet.

Urine in Epilepsy.—The acid-base composition of urine was determined by Gamble and Hamilton in a series of twenty-four hour specimens from an epileptic child. An accurate constancy of dietary factors and of fluid intake was maintained. It was found that during periods of seizures, a greatly increased excretion of total acid and of total fixed base occurred. The increment of total acid was chiefly composed of chloride ion, while the approximately corresponding extension of fixed base was nearly entirely sodium. The factors regulating the excretion of fixed base, i. e., urine acidity and ammonia, remained nearly stationary. These observations are taken as indicating a loss of extracellular body fluid in the urine during the periods of active epilepsy. The finding of corresponding increments of urine volume is in agreement with this interpretation.

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Journal of Industrial Hygiene, Baltimore

9: 503-554 (Dec.) 1927

*Ozone Fallacy in Garage Ventilation. C. M. Salls, Albany, N. Y.—p. 503.
*Degree of Nicotine Action on Workman's Organism from Inhaled Tobacco Dust. A. Burstein, Odessa, Russia.—p. 512.
Principles and Practices of Electric Power Industry as Related to Safety. J. P. Jackson.—p. 520.

Ozone Fallacy in Garage Ventilation.—According to Salls, the ozone generators that have been installed in a number of commercial garages and service stations do not convert carbon monoxide into carbon dioxide at a rate that is fast enough, or in proportion that is complete enough, to be of any practical use for the removal of carbon monoxide gas from the atmosphere. It is far better and more effective to open a few windows and permit the removal of the carbon monoxide by the process of natural diffusion; or, if a Sayers-Yant test is positive, to install mechanical ventilation. A suggestion has been made that ozone may be useful in the treatment of carbon monoxide poisoning, but its value for this purpose has not yet been proved; and it is not recommended that a gas considerably more poisonous than carbon monoxide be used to obtain a problematic physiologic advantage, when the installation of better ventilation is a safe and sure remedy. Experiments on known concentrations of carbon monoxide in a small room in which an ozonator was in operation while air samples were withdrawn at regular intervals for analysis by the Sayers-Yant method did not show any evidence of an appreciable action of the ozone on the carbon monoxide. The reaction is slow and far from complete, even after several days' exposure.

Effect of Inhalation of Tobacco Dust.—Burstein states that the alkalization of nicotine from inhaled tobacco dust by the juices of the body is fairly high, averaging 60 per cent of the total nicotine content of the tbocco dust which has penetrated into the respiratory tract, and 85 per cent of that which has reached the alimentary tract. Inhaled tobacco dust exerts on the organism a nicotine action fifteen times greater than does the same quantity of smoked tobacco, provided the nicotine content of the two is the same. The degree of nicotine action on the organism from inhaled tobacco dust can be estimated thus: Each 60 mg. of inhaled dust produces on the organism a nicotine action equal to 1 mg. of nicotine, when there is an average content of 2 per cent of nicotine in the tobacco dust. This relation can be more simply expressed in the following manner: From the point of view of nicotine action on the organism, 30 mg. of inhaled dust is equivalent to one smoked cigaret. The nicotine action on workmen's organisms in factories is due not to tobacco dust alone but to inhalation of the free nicotine contained in the air of factories. These data are based on a study of workers in the largest tobacco factory in the Ukraine.

Journal of Nervous and Mental Disease, Albany, N. Y.

67: 1-104 (Jan.) 1928

Karl Kleist: His Method of Research and Its Results. H. Strauss, Frankfort-on-the-Main, Germany.—p. 1.
*Pathology and Laboratory Diagnosis of Paresis. F. Proescher and A. Arkush, Agnew, Calif.—p. 21.
*Myasthenia Gravis: Three Cases. J. M. Nielsen and P. Roth, Battle Creek, Mich.—p. 32.

Laboratory Diagnosis of General Paralysis.—By means of their staining method (thiazin red), Proescher and Arkush have demonstrated iron particles in the adventitial cells in the brain and spinal fluid in cases of general paralysis. This is regarded as an essential aid in diagnosis. Spinal fluids in nonparalytic cases have proved negative. The stage of the disease affects the degree of reaction.

Myasthenia Gravis.—The three cases reported by Nielsen and Roth offer a few salient points for comparison. The first patient showed poorly developed musculature in general, with evidence of involvement of the bowels; there was a history of sexual excesses and of severe psychic trauma. In the second patient pregnancy had just been completed; the basal metabolic rate was very low (—36), and there was evidence of myxedema and of vegetative imbalance with involvement of the bowel. In the third patient there was poor musculature and evidence that practically constituted a diagnosis of syphilis of the central nervous system. Yet in all three cases there had been the typical onset and the typical development of myasthenia gravis. All three presented the myasthenic reaction of Jolly. Sexual excesses occurred in two but not in one. Myxedema was present in one, syphilis in one, and marked psychic trauma in one.

Kansas Medical Society Journal, Topeka

27: 395-426 (Dec.) 1927

Early Diagnosis of Clinical Pulmonary Tuberculosis. L. J. Moorman, Oklahoma City.—p. 395.
Labor. M. W. Hall, Wichita.—p. 399.
Amyotrophic Lateral Sclerosis: Pernicious Anemia and Combined Sclerosis. F. L. Flack, Coffeyville.—p. 402.
Ruptured Aneurysm of Branch of Cerebral Artery. F. C. Rewerts, Bartlesville, Okla.—p. 408.
Correlation of Field and Laboratory Work in Milk Control. N. Ritter, Kansas City.—p. 410.
Treatment of Undescended Testis. C. K. Smith, Kansas City, Mo.—p. 411.

Laryngoscope, St. Louis

37: 851-922 (Dec.) 1927

Use of Surgical Diathermy for Malignant Tumors in Anterior Air Passages. E. Schmiegelow, Copenhagen.—p. 851.
*Hoarseness of Infants: Causes. T. Matsui, Mukden, China.—p. 867.
Angiosarcoma of Tongue: Case. J. H. Harter, Seattle.—p. 869.
Postoperative Tonsillar Hemorrhage Due to Vincent's Organism: Five Cases. A. P. Tibbets, Washington, D. C.—p. 872.
Lateral Cervical Fistula: Case. E. Huizinga, Holland.—p. 878.
Sphenoid Sinusitis with Unique Symptoms. R. F. Ridpath, Philadelphia.—p. 880.
New Method for Skin-Grafting Mastoid Cavity and for Closing Off Eustachian Tube at Its Tympanic End. A. Kahn, New York.—p. 889.
Arsenic Treatment of Deafness. E. Wodak, Prague, Czechoslovakia.—p. 894.
Intracranial Complications of Otitic Origin. B. H. Shuster, Philadelphia.—p. 897.
Case of Choanal Atresia. P. L. Mahoney, Little Rock, Ark.—p. 920.
*Barbital to Prevent Toxicosis from Local Anesthetics. C. B. Williams, Mineral Wells, Texas.—p. 921.

Cause of Hoarseness in Infants.—Matsui states that most cases of hoarseness in Japanese infants are caused by paralysis of the recurrent nerve resulting from beriberi; a small number are caused by other diseases of the larynx. Paralysis generally appears in the left recurrent nerve, the right side seldom being attacked; this is due perhaps to the difference in the length of the two nerves. In adults, beriberi commonly attacks first the peripheral nerve of the sole of the foot, which is the longest nerve in the body.

Barbital Prevents Toxicosis of Anesthesia.—Williams substituted barbital for morphine and atropine in fifty-two cases—not selected—including tonsillectomies, adenectomies, submucous resections of the nasal septum and antrotomies. In only two instances were there any symptoms suggestive of toxicosis and these were transient, causing a delay of only two or three minutes. The patient takes 5 grains (0.32 Gm.) two hours before the appointed time for operation, and 5 grains one hour before.

Northwest Medicine, Seattle

26: 579-632 (Dec.) 1927

Choked Disk in Intracranial Lesions: Causation. G. W. Swift, Seattle.—p. 579.
*O-Iodoxy-Benzoic Acid in Treatment of Arthritis. R. L. Jeffery and K. S. Burns, Seattle.—p. 586.
Structural Scoliosis: Treatment. L. S. Lucas, Portland, Ore.—p. 588.
Weak Feet and Postural Defects. J. H. Robnett, Albany, Ore.—p. 592.
*Eugenics in Oregon. R. E. L. Steiner, Salem, Ore.—p. 594.

O-Iodoxybenzoic Acid in Treatment of Arthritis.—Of the twenty-four patients with arthritis treated by Jeffery and Burns with o-iodoxybenzoic acid, eleven were completely relieved and have remained so; nine were markedly improved; three were not improved or only slightly improved, and one failed to complete the treatments. In general, the most hopeful and satisfactory cases are those of the acute type of not long standing. Gonorrheal arthritis as a class seems to give the best results of all.

Eugenics in Oregon.—Steiner reviews the activities of the board of eugenics of Oregon, under whose direction 350 sterilizations and castrations have been performed. He endorses these procedures.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2: 1171-1214 (Dec. 24) 1927

Therapeutic Modification of Diet in Infancy. H. C. Cameron.—p. 1171.
*Mesenteric Lymphadenitis: Differential Diagnosis from Appendicitis. G. D. F. McFadden.—p. 1174.
*Treatment of Certain Mental Diseases by Ringer-Locke Solution. J. P. Steel.—p. 1177.
Congenital Word Blindness. A. M. MacGillivray.—p. 1178.
Aneurysm of Left Internal Carotid Artery Simulating Pituitary Tumor. S. D. Lodge, G. F. Walker and M. J. Stewart.—p. 1179.
Familial Pellagra in Ireland: Two Cases. J. T. MacCarthy.—p. 1180.
*Trendelenburg's Operation for Removal of Pulmonary Embolus. N. C. Lake.—p. 1180.
Treatment of Some Ocular Diseases with Ultraviolet Rays. E. R. Chambers and F. J. A. Mayes.—p. 1181.
Gas Gangrene Following Motor Accident. F. W. Marshall.—p. 1182.
Id. E. C. Ellis.—p. 1184.
Diabetes Mellitus Treated with Glukhorment. R. D. Lawrence.—p. 1184.
Case of Protracted Labor (Three Days). F. Radcliffe.—p. 1185.
Acute Peritonitis Combined with Labor. J. Armitage.—p. 1185.
Trigeminal Neuralgia Preceding Acute Glaucoma. R. S. Allison.—p. 1185.

Mesenteric Lymphadenitis.—McFadden asserts that mesenteric lymphadenitis is of frequent occurrence in children. The most common period for the complaint is between 7 and 11 years of age. Symptoms date back over a long period. The history of frequent attacks of lassitude, drowsiness, headaches and loss of appetite for weeks past is very common in these patients. Attacks simulating acute appendicitis, duodenal ulcer and other abdominal diseases are common. The site of tenderness in inflammation of the ileocecal group of glands is not McBurney's point but a situation higher up and more medial than this point. The cause of the condition is probably infection by the bovine tubercle bacillus, with a superimposed condition such as acidosis causing an acute attack. Acute conditions of the abdomen in children that are due to acidosis are caused by an underlying mesenteric lymphadenitis.

Treatment of Mental Diseases by Ringer-Locke Solution.—Steel relates his experience with the treatment of mental cases by regular and repeated injections of Ringer-Locke solution. It has been of definite benefit in cases in which there was a toxic element, and the mental condition seemed to improve more rapidly under this treatment than when "forced" elimination alone was employed. In the debilitated toxic patient, the time which must necessarily elapse before the toxic focus can be attacked is materially shortened. The general paralytic patient in poor bodily health seems to benefit to a very considerable degree; in fact, the treatment is used here with a view to bringing the patient into a suitable condition for trypars-amide medication. In addition, with the bodily improvement there is an increase in the eliminatory powers. So far little difference in habits has been observed. In the "psychologic" insanities little improvement has been noticed from the mental point of view, but even in this difficult class of patients the increased length of sleep and the diminution of restlessness is of considerable advantage both to the patient and to the hospital.

Removal of Pulmonary Embolus.—Lake reports a case of embolism of the pulmonary artery in which he removed the clot surgically, but the patient died. The clot removed was about 2 inches long, and tapered from the size of the finger at one end to two small branches, about one-eighth inch across, at the other end. It showed in addition several side branches. The operation performed by Lake was the one devised by Trendelenburg.

Lancet, London

2: 1327-1376 (Dec. 24) 1927

Ehrlich's "Chemotherapy." A. E. Wright.—p. 1327.
*Cancer of Pancreas with Metastases in Bone Marrow and Liver, and Megaloblastic Anemia. J. S. Faulds and W. Mackay.—p. 1334.
*Effect of Various Carbohydrate Foodstuffs on Blood Sugar in Diabetes. W. W. Payne.—p. 1336.
*Operation for Alleviation of Deafness. V. Nesfield.—p. 1338.
Suppurating Dermoid of Cerebellum: Case. J. Todesco.—p. 1340.
*Value of Sodium Tetra-Iodophenolphthalein in Diagnosis of Pancreatic Obstruction. S. Mort.—p. 1341.
Blood Transfusion in Syria: Analysis of 1,149 Blood Groupings. E. H. R. Altounyan.—p. 1342.
*Massive Tuberculosis of Liver. W. P. H. Sheldon.—p. 1343.

Cancer of Pancreas with Bone Metastases and Anemia.—When Faulds and Mackay first saw this patient, the symptoms were suggestive of pernicious anemia. However, the rapid enlargement of the liver, the presence of large numbers of nucleated red cells and myelocytes in the circulation, associated with pain over the ribs and sternum, suggested the diagnosis of malignant disease with bone metastasis. The presence of free hydrochloric acid in the stomach, and the result of the van den Bergh reaction, tended to confirm this diagnosis. A striking feature of the case was the presence of large numbers of nucleated red blood corpuscles in the circulation. At the necropsy, the liver was found to be enormously enlarged, the parenchyma being largely replaced by carcinomatous nodules of varying age and size. Extensive permeation of the liver substance had taken place with minute collections of malignant cells. The spread was up the biliary lymphatics, and no embolic cells were found in any of the blood vessels. The spleen was considerably larger than normal. Throughout the organ there was a diffuse invasion by malignant cells varying from groups of three or four up to masses the size of malpighian bodies. Embolic masses were to be seen in the arteries and veins spreading throughout the splenic sinuses. Situated in the substance of the pancreas at the junction of the body and head was a large tumor about the size of a walnut, which was taken to be the primary tumor. Microscopic examination showed it to be an adenocarcinoma. The bone marrow from the long bones was examined and in all there was decided vascular reaction. The entire length of the shaft of the bone was filled with marrow of a maroon color, and the appearance simulated that found in pernicious anemia. Peculiar opaque gelatinous-looking areas were scattered throughout the marrow of all the bones which microscopic examination showed to be secondary deposits of adenocarcinoma. On microscopic examination the bone marrow was not found to be normal in any case; an erythroblastic reaction was shown, with a varying amount of replacement with adenocarcinoma.

Effect of Carbohydrates on Blood Sugar in Diabetes.—Studies made by Payne on two diabetic persons show that many carbohydrate foods give a definitely smaller rise per gram of carbohydrate than does bread. With the exception of tomatoes and turnips, all fruits and vegetables tested gave a rise of about 50 per cent or less. Of the cereal foods used, oatmeal showed a figure slightly below 100 per cent on the one occasion it was examined. Rusks gave a varying response, but on the whole showed a definitely smaller rise per gram than bread. The cause of this lessened rise is probably a slower rate of absorption.

Operation for Alleviation of Deafness.—The fundamental idea of the operation devised by Nesfield is simple. When deafness is due to obstruction of the eustachian tube, the treatment is to make a new passage leading from the exterior into the cavity of the middle ear behind the ear drum. This incidentally opens the eustachian tube, as the middle ear is now no longer a closed cavity, and so the patient can easily blow air through the eustachian tube via the middle ear and out by the extreme auditory meatus. The middle ear is also drained, and the mucous membrane rendered healthy. Nesfield has operated on more than 200 patients, from the ages of 4 to 70. The results have been variable, depending on the period of the deafness. The improvement in the hearing of many patients who have been deaf for thirty years has been astonishing, and in no case has the condition ever been worse after the operation. In many the deafness has been arrested, while in the great majority the hearing has been markedly improved.

Value of Sodium Tetraiodophenolphthalein in Diagnosis of Intestinal Obstruction.—In order to determine whether or not there is an obstruction to the flow of bile into the intestine, Mort gives sodium tetraiodophenolphthalein by mouth in the form of powder, in doses of from 40 to 60 grains (2.6 to 4 Gm.), the dose varying with the body weight of

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the patient. If the capsules pass on intact into the large intestine, it is a sign that an obstruction is present in the region of the ampulla of Vater, causing deficiency not only in bile flow but also in the pancreatic juices, especially steapsin.

Massive Tuberculosis of Liver.—Sheldon relates the case of a boy, aged 11, who was admitted to the hospital with a history of having suffered for six weeks from sharp attacks of pain in the right hypochondrium. The pain occurred about twenty minutes after taking food, and often radiated up between the shoulder blades. During this period there had been three transient attacks of jaundice. The liver was enlarged, but not tender, and extended 2 inches below the costal margin. Neither ascites nor edema of the extremities was present. The urine was normal. The Wassermann reaction was negative; a blood count did not show anything abnormal beyond a slight secondary anemia. The fragility of the red corpuscles was normal. At first it was thought that the liver contained secondary deposits of malignant growth, but the boy seemed to be in such good health that the diagnosis was altered to cirrhosis of the liver. The boy lived for six months. During this time he had one attack of jaundice, which lasted a month and completely cleared up. During the last two months there had been a daily pyrexia up to about 101 F., and emaciation became profound. Eventually, the symptoms of tuberculous meningitis appeared, and the boy died. At the necropsy, the cranial contents showed the typical appearance of tuberculous meningitis. The bodies of the fourth, fifth and sixth thoracic vertebrae were carious and had formed a large abscess, which was adherent to the adjacent pleura covering the upper lobe of the right lung. The lung in this part contained several small tuberculous cavities, and the rest of the right lung showed tuberculous bronchopneumonia. The peritoneum was thickly studded with small cauliflower-like masses of caseous material. The spleen was enlarged, and its capsule was covered with similar caseous tufts, but the spleen pulp was entirely free of tubercle formation. Both kidneys were enlarged, but did not contain any tubercles. The mucosa lining the stomach and intestines was normal; the mesenteric glands contained a few foci of miliary tuberculosis. The liver extended down to the umbilicus. Its surface was covered with caseous masses, while projecting from the liver substance through to the surface were many bosses of yellow tuberculous material. The left lobe was almost entirely occupied by a large abscess which was filled with a greenish-yellow liquid consisting of liquefied tuberculous pus, broken-down liver substance, and bile. In the upper part of the right lobe of the liver was a similar abscess. In addition, the right lobe contained several smaller areas of solid yellow caseation, situated just under the capsule, suggesting that the causal organism had entered the liver through the peritoneal surface. The liver did not contain any miliary tubercles. Microsopic examination confirmed the diagnosis of tuberculosis of the liver.

Archives de Médecine des Enfants, Paris

30: 633-696 (Nov.) 1927

*Aortic Signs of Hereditary Syphilis in Child. J. Martagão Gesteira.—p. 633.
*Two Cases of Craniofacial Dysostosis Neither Hereditary nor Familial. Roubinovitch, O. Crouzon, P. Foulon and Gilbert-Dreyfus.—p. 650.
New Case of Hereditary Pleonosteosis with Severe Involvement of Greater Articulations. J. Rouillard and P. Barreau.—p. 657.
Varicella and Pemphigus. P. Lereboullet and M. David.—p. 665.

Aortic Signs of Hereditary Syphilis in the Child.—In the author's nine cases, all in children, there was a marked clanging of the second aortic sound. Radioscopic examination demonstrated alterations in the aorta. In some of the patients a favorable modification of the acoustic phenomenon occurred during antisyphilitic treatment, confirmed in two cases by a new orthodiagram showing considerable diminution in size of the aorta. These lesions seem to be relatively frequent in children with hereditary syphilis. They are, however, of transitory character and easily modified by antisyphilitic medication.

Two Cases of Craniofacial Dysostosis Neither Hereditary nor Familial.—The first case reported by Roubinovitch et al. was that of a woman, aged 38, whose face was prognathic with a short upper lip, a parrot nose and marked exophthalmia with divergent strabismus. There was a frontal prominence and a tendency to brachycephaly. Her intelligence was not keen. There was no evidence of heredity. Radiography confirmed the diagnosis of craniofacial dysostosis. The second case was that of a boy, aged 9, who presented extreme craniofacial dysostosis. He was born after a very difficult labor. The upper part of the head rose to a point. The nose was curved inward, the upper lip shortened and the lower jaw prognathic. Exophthalmia was such that the outer edges of the eyelids had to be sutured. The child was talkative, turbulent, self-willed, undisciplined and a fighter. He was incapable of working at school, and his mind was that of a 3 or 4 year old child. There were sphincteral disturbances. The dysostosis, confirmed by radiography, was neither familial nor hereditary.

Revue Française de Gynécologie et d'Obst., Paris

22: 587-646 (Nov.) 1927

*Extraperitoneal Cesarean Section with Uteroparietal Suture. E. Zarate.—p. 587.
*Spinal Anesthesia in Cesarean Operation. S. Odagesco.—p. 596.
Fetal Dystocia with Unusual Cause. A. Marcakis.—p. 614.

Extraperitoneal Cesarean Section with Uteroparietal Suture.—Zarate presents three successive operations, extraperitoneal cesarean section by a new method, second cesarean section and subcutaneous symphysiotomy, in one patient. In the first operation, the author isolated the anterior surface of the uterus from the rest of the abdominal cavity, and afterward used a suture en bloc, in which the two edges of the abdominal incision were fastened to the two edges of the uterine wound. Healing, in this case by second intention, resulted in an excellent uterine cicatrice which withstood the test of two pregnancies and one labor almost to complete dilatation.

Spinal Anesthesia in Cesarean Section.—Only spinal anesthesia supplies the ideal conditions of contraction, retraction and, hence, bloodlessness of the uterus which is to undergo cesarean section. Absence of hemorrhage during the operation and for some time afterward is one of the factors which count most for the cicatrization of the uterine wound.

Schweizerische medizinische Wochenschrift, Basel

57: 1065-1088 (Nov. 5) 1927

Resorption as Biologic Principle. E. Tschopp.—p. 1065.
*Eclampsia. H. Rossenbeck.—p. 1067.
*Bile and Magnesium. L. Augsberger.—p. 1069.
Tests of Auriculoventricular Conduction. I. Mahaim.—p. 1070.

Eclampsia.—Rossenbeck tested the serum as to its organic ionic condition in four cases of eclampsia, in two cases of nephropathia gravidarium, and in one case of epilepsy. He found that the chlorine was raised from 10 to 15 per cent above its normal value, and the sodium had fallen 20 to 25 per cent below normal. Potassium was, in some of the cases, normal, in the remainder just under normal. Serum from the case of epilepsy showed a strikingly low potassium value. Calcium, in the whole series of cases, fluctuated between the upper and lower limits of normal. The normal excess of sodium over chlorine had disappeared and had been replaced by an absolute excess of chlorine over sodium. In view of recent investigations, one might conceive of the convulsions as a kind of effort of the organism at self-cure by increasing alkalosis to protect itself against complete paralysis of metabolism in the tissue. Phosphoric acid and lactic acid are set free by every muscle contraction. Both these acids, the great increase of which in eclamptic serum is well known, could be drawn into the tissues for the neutralization of the accumulated sodium and make it possible for this to travel back into the circulating blood. At the same time, the threatened overacidification of the circulating blood could be combated by the increased washing out of the phosphoric acid in the form of secondary phosphates. It is to be hoped that a causal therapy may grow out of research on the subject of eclampsia.

Bile and Magnesium.—The magnesium content of human bile is considerably lower than the calcium content. In an examination of human biliary fistulas and gallbladders in several cases, the bile of the former was found to contain from 2.25 to 5.5 mg. of magnesium per hundred cubic centi-

meters, that of the latter between 18 and 65 mg. per hundred cubic centimeters, showing a considerable increase in concentration in the gallbladder. Magnesium is soluble in water up to about 15 mg. per hundred cubic centimeters. For the bile experiment, the author used powdered bile which contained 30 mg. of magnesium. In a 15 per cent bile powder solution, 91 mg. of magnesium per hundred cubic centimeters went into solution. Magnesium oleate is much more soluble in bile than in water. The bile is a good medium for research in studying the absorption of magnesium salts.

57: 1089-1112 (Nov. 12) 1927

Effecting Intra-Ocular Fluids by Drugs. A. Franceschetti.—p. 1089.
Effect of Neutral Substances on Hydrogen Ion Concentration. F. Leuthardt.—p. 1090.
Anatomy of Blood Capillaries and of Blood of Man. P. Vonwiller. —p. 1093.
*Results of Examination of Eyes of Infants Born by Cesarean Section. F. Stocker.—p. 1096.
Functional Disturbances of Ovary: Treatment. R. Klotz.—p. 1099.
Illusion and Therapy, à Propos of Treatment of Pulmonary Tuberculosis. T. Stephani and J. Stephani.—p. 1102.

Results of Examination of Eyes of Infants Born by Cesarean Section.—Stocker examined the eyes of twenty-two infants born by cesarean section. He failed to find any retinal hemorrhages, such as are seen when babies are born per vias naturales. Circulatory disturbances (venous stasis) were present in 5 per cent. Stocker sees many advantages to the child in cesarean section.

57: 1113-1136 (Nov. 19) 1927

*Use of Radium from Surgical Point of View. H. Matti.—p. 1113.
Use of Leeches in Treatment of Phlebitis. A. Hamm and A. Schwartz. —p. 1125.
Is Calmette's Tuberculosis Vaccination Entirely Harmless? E. Wieland.—p. 1132.

Use of Radium from Surgical Point of View.—Matti relates his experience with the use of radium, from a surgical viewpoint, in the treatment of malignant tumors of various organs and tissues and of their metastases. Some very outstanding results were seen in carcinoma of the prostate, tongue, rectum, tonsil, prepuce, breast, larynx, stomach, etc.; lymphosarcoma, thyroid tumors, tumors of the mediastinum, etc., and metastases of all of these. The need for close cooperation between physicist and surgeon and the employment of a good technic, especially as regards the application of the radium, is emphasized.

Archivio di Patologia e Clinica Medica, Bologna

6: 369-488 (Sept.) 1927

Physiology of Capillaries. L. Lenaz.—p. 369.
Diabetes Insipidus. C. Cassano.—p. 392.
*Creatine and Creatinine in Urine. G. Salvioli.—p. 429.
*Thyroid and Skin Diseases. B. Sparacio.—p. 448.

Creatine and Creatinine in the Urine of Children.—In fifty-three normal children and in eighty-seven children with various diseases, the excretion values for creatine bodies were determined. In tuberculosis the values always increase, especially in the presence of fever. If the condition continues serious for some time, the values tend to decrease while the rate per body weight tends to increase. In nontuberculous febrile pulmonary diseases, there is an increase over the normal average, and during convalescence and chronicity a decrease. The amount of creatine bodies excreted increases as the age advances.

State of Thyroid in Skin Diseases.—Out of sixty-five cases of vitiligo, alopecia, psoriasis, seborrheal acne and other skin diseases, Sparacio found hyperthyroidism in twenty-one and hypothyroidism in twenty-two. Many patients improve under thyroid medication. In several cases with deficient ovarian function, the basal metabolism was normal. Among the glands of internal secretion the thyroid is the easiest to test by the basal metabolic rate.

Ospedale Maggiore, Milan

15: 387-418 (Oct. 31) 1927

Tryptic Ferments in Gastric Contents and in Feces. G. Vercellotti. —p. 387.
Jacobeus' Operation in Pulmonary Tuberculosis. E. De Castiglione. —p. 405.
*Perforated Peptic Ulcer. E. Pizzoglio.—p. 410

Perforated Peptic Ulcer Following Ingestion of Barium.—In one of the cases reported, the ulcer was duodenal; in the other, gastric. In both cases, the perforation seems to have been due to the ingestion of barium for fluoroscopic purposes.

Rivista di Clinica Pediatrica, Florence

25: 697-768 (Oct.) 1927

Uncommon Sequela of Epidemic Encephalitis. A. Rostan.—p. 697.
Oppenheim's Disease. I. Tomassini.—p. 714.
*Blood Sugar in Children. L. Cartagenova.—p. 733.
Rabies in Children. B. Trambusti.—p. 739.
Influence of Thymus on Body Growth. M. Raspi.—p. 750.

Blood Sugar in Diphtheria.—A study of thirty-nine children with various diseases proves that in diphtheria hypoglycemia parallels the seriousness of the disease and is influenced by the character of the serum therapy.

Anales de la Facultad de Medicina, Montevideo

12: 369-534 (July-Aug.) 1927

*Pseudoduodenal Ulcer from Hookworm Disease. A. Roig and H. G. Caffera Abadie.—p. 369.
Tendon Tumors. C. M. Dominguez.—p. 382.
Tuberculosis of the Ileum. L. D. Bottaro and C. M. Dominguez. —p. 397.
Blood Supply of Duodenum. J. C. del Campo.—p. 404.
Pancreatitis. C. Stajano.—p. 419.
Complement Fixation and Resorcin Test in Tuberculosis. A. Prunell. —p. 430.
Melancholia and Diabetes. I. Más de Ayala.—p. 434.
Syphilitic Reinfection and Chancre of Tonsil. S. Grezzi and V. C. Paullier.—p. 442.
*Treatment of Asthma. S. Grezzi.—p. 447.
Clinical Capillaroscopy. R. V. Tálice.—p. 451.

Hookworm Disease Simulating Duodenal Ulcer.—A patient was admitted to the hospital for operation for duodenal ulcer. Fluoroscopy and roentgenography at first left the matter in doubt, but the second series of pictures failed to show either deformation or filling defect. A fecal examination disclosed numerous anchylostoma eggs.

Peptone Treatment of Anaphylactic Asthma.—In seven patients with asthma, Grezzi tried Vallery-Radot's peptone therapy. It succeeded in all, save a woman with old cardiopulmonary lesions. The prompt exacerbation of urticaria after the injection proves that peptone acts through hemoclastic shock. In six of the seven cases, skin diseases of anaphylactic origin either coexisted or alternated.

Archivos Chilenos de Pediatría, Santiago

4: 621-663 (July-Aug.) 1927

*Jaundice in the New-Born. A. Ariztia.—p. 621.
Infantile Edema. M. Muñoz Valenzuela.—p. 627.
Alkali Therapy in Infants. A. Wiederhold.—p. 634.

Familial Jaundice in the New-Born.—Four successive children of one family manifested icterus at birth. Two died. One child, a boy, recovered, without developing hemorrhage, after administration of glucose solution and injections of hepatic extract.

Revista Médica de Chile, Santiago

55: 421-495 (Oct.) 1927

*Inheritance in Tuberculosis. C. Monckeberg and J. M. Vergara K. —p. 421.
*Insulin in Uremia. C. Lobo Onell, I. Diaz Muñoz and O. Donoso B. —p. 442.
Joint Disease in Congenital Syphilis. A. Garretón Silva.—p. 456.

Hereditability of Tuberculosis.—In six out of twenty proved cases of maternal tuberculosis, inoculation tests with blood from the cord and with a placental emulsion proved positive in the guinea-pig. The tubercle bacillus was never found directly in the fetal blood or organs or in the placenta. An infant whose blood proves positive as to tuberculosis in the guinea-pig test may not die in the first year. The presence of general tuberculosis in the mother is not necessary for passage to the fetus, such general infection existed in only one case. In two cases, the delivery was by the abdominal route before term. Placental injury during labor is, therefore, not a prerequisite for fetal infection.

Insulin in Acute Uremia.—Lobo and his associates used insulin successfully to control uremia in five cases of prostatic enlargement, renal ptosis and polycystic kidney.

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Revista Méd.-Quirúrgica de los Hospitâles, Bogota

2: 499-538 (June) 1927. Partial Index

Coexistence of Pregnancy with Fibromyoma. R. Ucrós.—p. 499.
Primary Infantile Acidosis. C. Torres Umaña.—p. 505.
*Plasmochin in Treatment of Malaria. A. Peña Chavarría.—p. 523.

Plasmochin in Treatment of Malaria.—Of 100 malaria patients treated with compound plasmochin, fifty-one were infected with *Plasmodium falciparum*, forty-two with *Plasmodium vivax*, six with mixed forms and only one, a child, aged 3, with *Plasmodium malariae*. This is the most uncommon type on the Carribean coast. In only one case did vomiting occur. Gastric pains and facial cyanosis were also comparatively rare. In ten patients the Wassermann test changed from positive on admittance, to negative seven days after starting the plasmochin treatment. Plasmochin and quinine sulphate together proved more successful. The action is almost immediate on the plasmodia in the blood stream. As it does not act on the uterine muscle, plasmochin seems specially indicated in pregnant women with malaria. It is also valuable for use in hospitals and field treatment on a large scale. As the drug occasionally depletes hemoglobin, iron treatment seems advisable during the interval.

Revista Mexicana de Biología, Mexico City

7: 107-123 (Sept.-Oct.) 1927. Partial Index

*The Blood After Thymectomy. F. Ocaranza.—p. 107.

Blood Changes After Experimental Removal of the Thymus.—After complete thymectomy in guinea-pigs, the erythrocytes decrease in number for a few days. A progressive increase then begins until previous figures are restored. Changes in the leukocytes are less pronounced and less regular, but they usually tend toward a brief, delayed leukopenia. This change is limited to animals more than 3 months old. This is the time when the growth of the thymus stops.

Revista Oto-Neuro-Oftalmológica, Buenos Aires

1: 201-256 (Oct.) 1927

*Infantile Angiomas. A. M. Marque.—p. 202.
Unilateral Cranial Nerve Syndrome. J. Lijó Pavía and R. Orlando. —p. 217.
Primary Diffuse Leptomeningeal Sarcoma. M. R. Castex, J. Llambias and S. Balcstra.—p. 235.

Angiomas in Children.—Among the 507 cases reported, the most frequent site was the scalp (fifty cases), eyeball (forty) and nose (thirty-four). All sizes, shapes and sites were found. Out of ninety-two cases in which a Wassermann test was performed on the mother, the reaction was positive in only two. Inheritance seemed a possible factor in only one case. In tumors on the face, nervous disturbances must be sought for carefully. Treatment should be largely preventive. Electrolysis is useful in many cases, especially in adults. In children, roentgen rays are better. The earlier the treatment, the better the result.

Deutsche medizinische Wochenschrift, Berlin

53: 2015-2056 (Nov. 25) 1927

Perthes' Operation for High Rectal Cancer. E. Borchers.—p. 2015.
*Blood Transfusion in Typhoid. G. Hänsch and E. Hartmann.—p. 2017.
Gruber-Widal Reaction in Persons Vaccinated Against Typhoid. L. Poleff. —p. 2018.
*Diuretic Action of Bile Acids. F. Lebermann.—p. 2020.
Diagnostic Value and Cortical Localization of Oppenheim's Reflex. K. Mendel and F. Selberg.—p. 2022.
Disturbances of Equilibrium and Hearing in Epidemic Parotitis. O. Voss. —p. 2023. C'td.

Blood Transfusion in Typhoid.—Hänsch and Hartmann recommend blood transfusion in the treatment of typhoid, but not to the exclusion of other methods of treatment. They used the blood of typhoid convalescents or of persons immunized against typhoid or even of nonimmunes, if necessary. There appeared to be no difference in the results obtained. From 250 to 400 cc. of citrated blood was injected intravenously. Mild cases and those with pulmonary complications were not given this treatment. In cases transfused early, pulmonary complications seemed to be prevented. The treatment was particularly effective in cases of hemorrhage and anemia. No untoward effects were noted in any case. Transfusions may be repeated; in one case three were made. The general condition of the patient is immediately improved, the temperature falls and the hemorrhages are checked and usually do not recur. Of thirty-four patients treated by blood transfusion, only two died; of 150 patients not transfused, fourteen died.

Diuretic Action of Bile Acids.—Lebermann has found bile acids to be valuable diuretics in cases of oliguria and edema resulting from decompensated heart lesions.

Klinische Wochenschrift, Berlin

6: 2169-2216 (Nov. 12) 1927

Glycerin and Insulin. O. Loewi.—p. 2169.
*Effect of Prolonged Cooking on Nutritive Value of Food Prepared with Milk. A. Scheunert and E. Wagner.—p. 2176.
*Increase in Mortality from Thrombosis and Pulmonary Embolism. T. Fahr.—p. 2179.
Relationship Between Internal and External Secretion of Pancreas. G. Deusch and E. Drost.—p. 2180.
*Protection Against Light by Irradiated Albumin Solutions. W. Hausmann and M. Spiegel-Adolf.—p. 2182.
Law of Surface Energy or New Law of Function of Internal Organization. L. Kaup and A. Grosse.—p. 2184.
Sulphur Treatment of Dementia Paralytica and Metasyphilis of Central Nervous Systems. K. Schroeder.—p. 2189.
Vaccination Against Yellow Fever in West Africa. W. H. Hoffmann. —p. 2191.

Comparison of Nutritive Values of Food Prepared with Raw Milk and with Milk Subjected to Long Heating.—Scheunert and Wagner did not observe any deleterious effect from long continued cooking or heating on the nutritive value of foods prepared with milk in their studies on the growth of rats. This is exactly the opposite of what Friedberg reported.

Increase in Mortality from Thrombosis and Pulmonary Embolism.—Fahr points out that there has been an astounding increase in the number of deaths from thrombosis and pulmonary embolism since 1922. The largest proportion of deaths occurred among persons afflicted with cardiovascular diseases. Fahr feels that the increasing use of intravenous therapy may have something to do with this, inasmuch as nothing else has changed in recent years in the clinical history or treatment of these cases.

Protection Against Light by Irradiated Albumin Solutions.—Hausmann and Spiegel-Adolf have observed a decided protection against the erythema and hemolysis produced by the rays from a mercury vapor lamp when irradiated albumin solutions were used as a filter.

Monatsschrift f. Geburtshülfe u. Gynäkologie, Berlin

77: 153-306 (Oct.) 1927

*Early Diagnosis of Pregnancy. A. Dienst.—p. 157.
*Value of Wassermann Reaction in Milk. H. Franken and H. G. Rottmann.—p. 163.
Congenital Renal Dystopia as Birth Hindrance. J. Mennet.—p. 172.
Symptomatology and Treatment of Hydatid Mole. J. Malfatti.—p. 177.
Treatment of Rectovaginal Fistula. H. Harttung.—p. 187.
Ectopia of Persisting Urogenital Sinus. E. Kattermann.—p. 195.
*Mediastinal Emphysema and Air Embolism in the New-Born. K. Kaiser and G. Schrader.—p. 205.
*Bleeding in Pregnancy and Malformation of Fetal Heart. E. Löwenstein. —p. 211.
Case of Pyometra. M. Esser.—p. 217.
Pathologic Anatomy of Salpingitis. I. Fögel.—p. 221.
Extra-Uterine Pregnancy. P. Garfunkel.—p. 233.
*Use of Turpentine in Gynecology. A. von Probstner.—p. 238.
Salpingography. W. Lüttge.—p. 248.

Early Diagnosis of Pregnancy.—A recent observation of Dienst's in connection with his pregnancy reaction, is that under normal conditions the antithrombin content of the serum continues to rise during the first and second months of pregnancy and reaches its greatest height in the ninth week. The amount of metathrombin in the urine increases from month to month. It begins to sink shortly before the onset of labor. From this time on there is a predominance of thrombin over antithrombin and metathrombin in blood plasma, serum and urine, and Dienst sees a connection between this predominance of thrombin in the blood and the excitation of the labor pains as well as of various phenomena that precede the onset of labor.

Value of Wassermann Reaction in Milk.—In 225 puerperal women the Wassermann test was applied to the milk as well as to the blood serum. The results agreed in 95.5 per cent. In only one case did the reaction in the milk

prove more accurate than in the retroplacental blood. The reaction in the milk is most pronounced from the eighth to the tenth day.

Mediastinal Emphysema and Air Embolism in the New-Born.—At necropsy on a baby whose cries at birth had been weak and who had breathed superficially during the twelve hours during which it lived, air was found in the left heart, the coronary arteries and the mediastinal tissue. There were numerous hemorrhagic foci in the brain. Kaiser and Schrader explain the child's death and the pathologic changes as follows: On the rupture of the membranes, hemorrhage occurred in the child's brain, with injury to the respiratory center. During the forced respiratory movements following birth, the lung tissue was torn, and from this resulted mediastinal emphysema and air embolism.

Bleeding in Pregnancy and Malformation of Fetal Heart.—Löwenstein reports the case of a young woman with uterus septus duplex, who had previously borne a microcephalic child. The second pregnancy was undisturbed up to the eighth month, when bleeding set in. As he was unable to control it, he delivered the woman by cesarean section. The child was born cyanotic and asphyctic. With difficulty it was kept alive for nine hours. Necropsy showed malformation of the heart. Löwenstein interprets this case as one of premature separation of the placenta and includes the pathologic condition of the fetus among the causes which brought this about, which were, in addition, a railway journey and the double uterus.

Turpentine Treatment in Gynecology.—Probstner was disappointed with the results of intramuscular injection of turpentine (Klingmüller) in the 270 patients with acute or chronic inflammation of the adnexa, parametritis or perimetritis, in whom he tried the treatment.

Münchener medizinische Wochenschrift, Munich

74: 1945-1992 (Nov. 18) 1927

Explosive and Delayed Epidemics. M. Knorr.—p. 1945.
*Sulphuretted Hydrogen in Blood in Uremia. E. Becher.—p. 1950.
Interfereometric Methods of Abderhalden's Reaction, Especially in Joint Diseases of Endocrine Origin. A. Zimmer, E. Lendel and W. Fehlow.—p. 1952.
Nutritive Value of Cooked and Well Cooked Food. E. M. P. Widmark and F. Stenqvist.—p. 1955.
Combating Pain Following Oral Surgery. Weissenfels.—p. 1957.
Case of Leukoplakia of Portio Vaginalis. Hinselmann.—p. 1958.
*Epidemic Parotitis a Severe Disease. J. K. Friedjung.—p. 1959.
*Late Roentgenism of Bones. M. Grasmann.—p. 1960.
Traumatic Castration Followed by Suicide. H. Baumm.—p. 1960.
Local Light Therapy. H. Malten.—p. 1961.
Medical Gymnastics in China. E. Huber.—p. 1963.

Sulphuretted Hydrogen in the Blood in Uremia.—Becher failed to find sulphuretted hydrogen in the blood in cases of uremia and high degrees of renal insufficiency. All body fluids, especially the blood, can destroy added sulphuretted hydrogen by oxidation. This power varies with different diseases, and is diminished by heat. Furthermore, it is "used up" by continued operation.

Epidemic Parotitis is Salivalitis Epidemica.—Inasmuch as epidemic parotitis is a general, not a local disease, one which affects all the salivary glands, including the pancreas, Friedjung proposes to name it salivalitis epidemica.

Late Roentgenism of Bones.—In 1916, Grasmann's patient was treated with the roentgen ray for lupus of the hand. Ten years later, the skin was shrunken, dry, telangiectatic and pigmented; the muscles were weak and atrophied; the bones of the hand and forearm were smaller than normal, the cortex was thin and the marrow cavity of the radius had disappeared. Grasmann ascribes this condition to an injury of the bone cells caused by changes in the supplying blood vessels incident to the intensive roentgen irradiation given ten years ago.

Wiener klinische Wochenschrift, Vienna

40: 1437-1468 (Nov. 17) 1927

Binocular Vision. M. Sachs.—p. 1437.
*Experiences with Wohlgemuth's Test in Diagnosis of Disease of Pancreas. A. Winkelbauer and O. Bsteh.—p. 1441.
Rupture of Spleen and Duodenal Ulcer. F. Demmer.—p. 1443.
*Differences in Fever Curve of Therapeutic Malaria. F. Stumpfl.—p. 1445.
Cholecystectomy and Acidity of Gastric Juice. H. L. Popper.—p. 1447.
Stimulation of Long Growth of Bones by Extension. H. Abels.—p. 1449.
Subcutaneous Correction of Hump Nose. E. Eitner.—p. 1449.
Heart Percussion. N. Jagić.—p. 1450.
Study of Gastric Function. W. Zweig.—p. 1451.
*Results of Roentgenotherapy of Gastric and Duodenal Ulcer. R. Lenk.—p. 1454.

Experiences with Wohlgemuth's Test in Diagnosis of Disease of the Pancreas.—Winkelbauer and Bsteh regard Wohlgemuth's test as being valuable in determining the function of the pancreas. The highest values were obtained in cases of acute necrosis of the pancreas. Obstruction of the ducts causes amylosuria. Lesions of neighboring structures—peritonitis or syphilis of the liver—that affect the pancreas also give positive reactions.

Differences in Fever Curve of Therapeutic Malaria.—Observations made by Stumpfl on more than a thousand patients treated by therapeutic malaria showed that the tertian fever curve was high in early cases of syphilis. Only 7 per cent of the paralytics presented a pure tertian fever. Cases of tabes, multiple sclerosis and postencephalitic parkinsonism occupied a middle ground.

Results of Roentgenotherapy of Gastric and Duodenal Ulcer.—Lenk asserts that roentgenotherapy of peptic ulcer has a distinct place in treatment in cases that are not progressing favorably under diet and alkali treatment and in which there is not a definite indication for surgical intervention. Contraindications are: a suspicion of malignant degeneration, peritoneal irritation and any organic stenosis. Symptoms of spasm of the gastro-enterostomy opening or of a vicious circle are relieved promptly by roentgenotherapy and reoperation may thus be avoided. He advises postoperative treatment, by means of small doses of the roentgen ray, in every surgically treated case of ulcer.

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Ugeskrift for Læger, Copenhagen

89: 1123-1166 (Dec. 8) 1927

*Bacterium Abortum of Bang as Pathogenic Microbe in Man. M. Kristensen.—p. 1123.
*Septicemia Caused by Bacterium Abortum of Bang. K. Gaarde.—p. 1141.
Cosmetic Operations on Nose and Paraffin Injections. N. R. Blegvad.—p. 1141.

Rôle of Bacterium Abortum of Bang as Pathogenic Microbe in Man.—Kristensen made agglutination tests for Bang's bacillus in 1,375 specimens of blood submitted for the Widal test. In the eighty-nine cases here recorded by him, the reaction was so marked as to be considered specific, according to the usual serodiagnostic procedure. In thirteen cases *Bacterium abortum* was cultivated from the blood and verified by various tests. In seven other cases, while cultivation failed, the similarity of the general clinical type made infection with *Bacterium abortum* highly probable. The remaining sixty-nine cases presented a somewhat more varied picture but, except in one case of possible paratyphoid infection, infection with *Bacterium abortum* seemed probable. Although seroreactions and clinical course did not, he says, exclude infection with *Bacillus melitensis*, the patients' history rendered it unlikely. Complement fixation tests for Bang's bacillus made in a large part of the material gave practically no positive results except with serum that agglutinated the bacillus. The seroreaction to *Bacterium abortum* was specific in high degree, the only noteworthy source of error being the possible dependence of the reaction on an earlier infection. The stronger the reaction, the less this likelihood becomes. Comparison of the results of the agglutination and complement fixation tests also points to the time of appearance of the reaction, complement fixation, as a rule, appearing later and continuing longer than agglutination. He agrees with the inclusion of infection with Bruce's bacillus and infection with Bang's bacillus under the term "febris undulans." He regards infection with Bang's bacillus in man as being accidental.

Septicemia Caused by Bacterium Abortum of Bang.—In Gaarde's case of septicemia in a boy, aged 16, there were marked hemorrhages from the mucous membranes of the nose and throat and from the kidneys and a purpura-like exanthem. The patient's history and the pronounced agglutination reaction indicate infection with *Bacterium abortum*. Gaarde thinks the bleeding may, perhaps, be due to infection with a particularly virulent micro-organism.